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From top: Pooling around in Russell, Kansas (untitled photograph by Mary Ellen Mark, 1996); a sperm whale bull; G.I. Joe and buddies in their A.W.E. Striker vehicle. **COVER: A camel caravan in the Merzouga dunes of Morocco. Photograph by Kay Chernush.**

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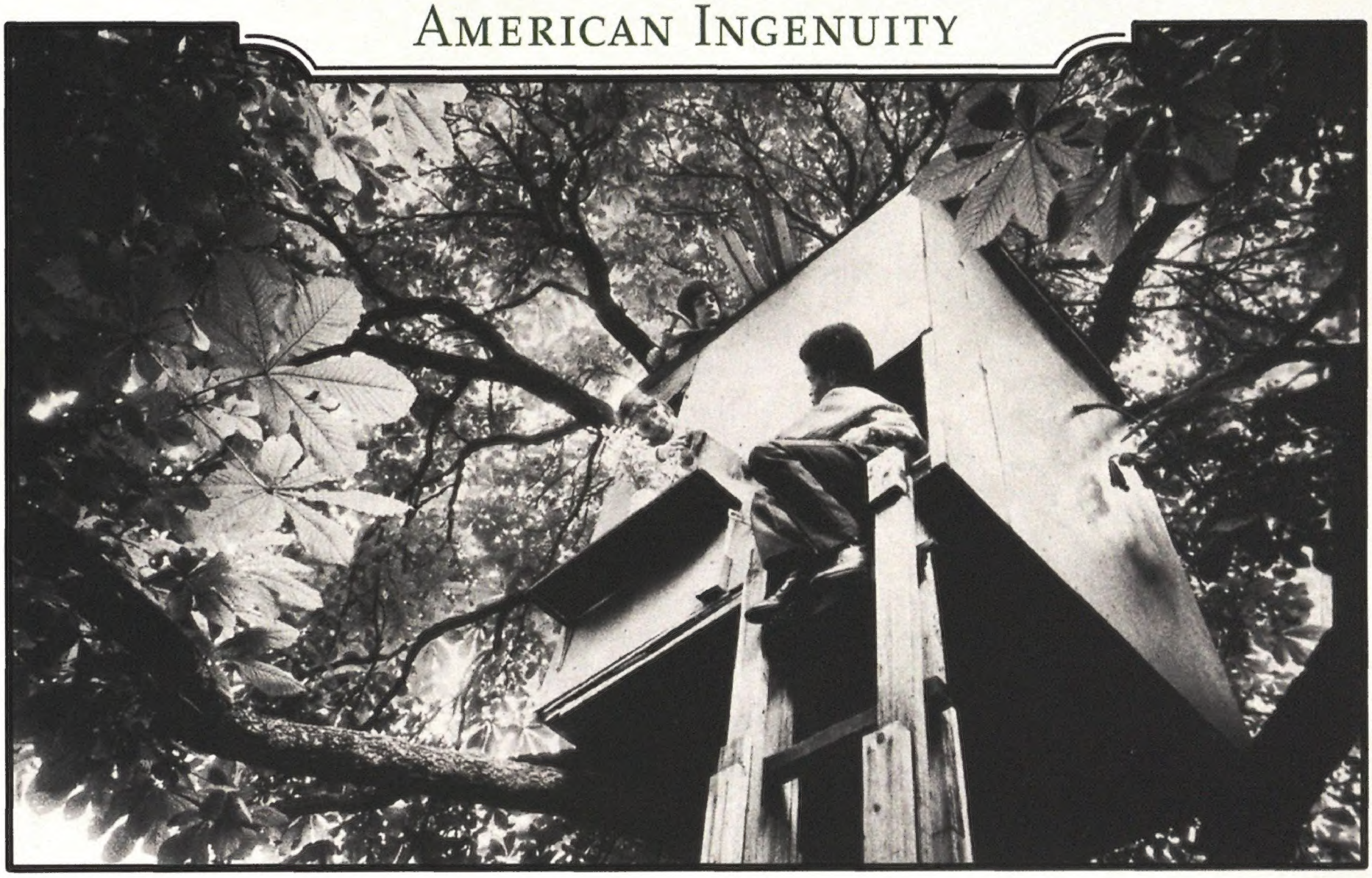

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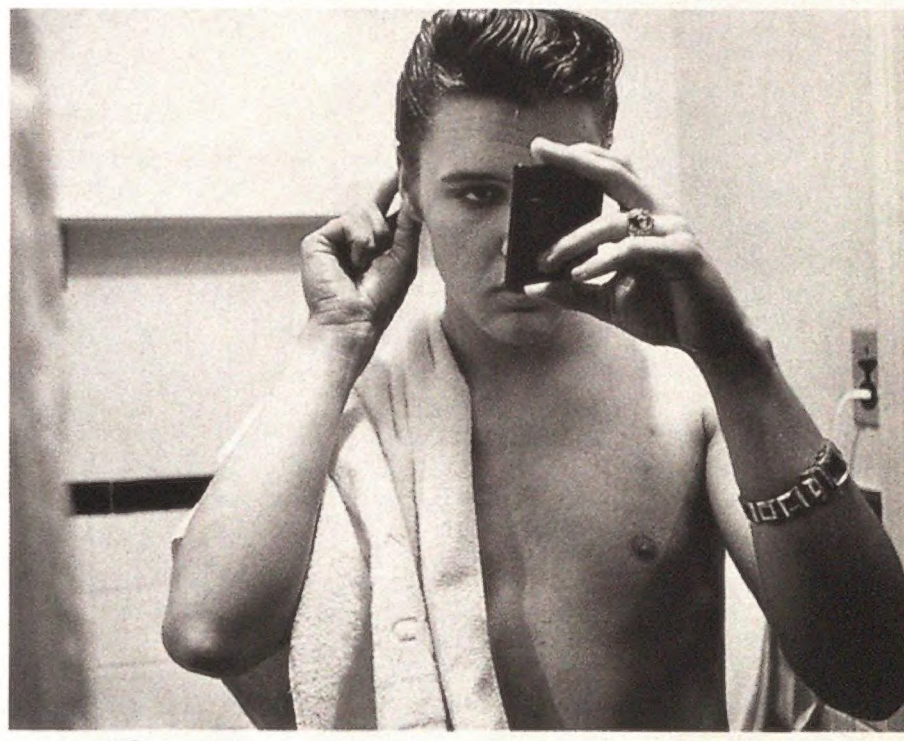

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From top: Horses and riders explode from the starting line at the Palio in Siena, Italy; Berber women watch a mock wedding at the Brides' Fair, Morocco; Elvis Presley gets ready to meet his mama.

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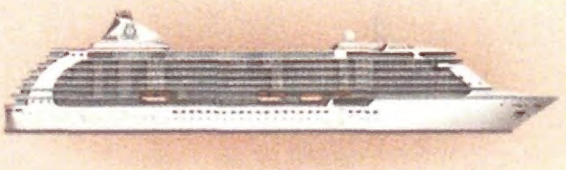

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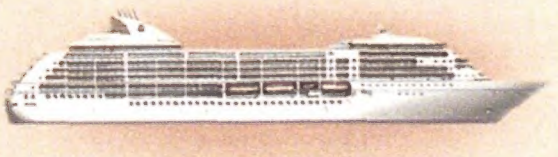

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SARAH JONES

EDITOR'S INKWELL

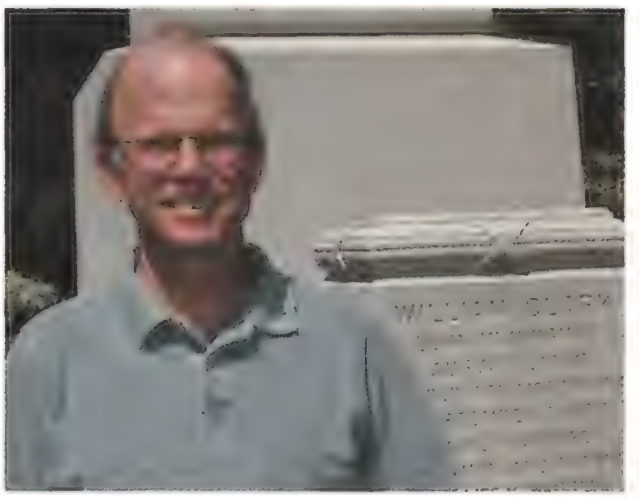
Joyous View

A BIOGRAPHER AND HIS SUBJECT, WILLIAM CLARK, MEET IN ST. LOUIS

BY CAREY WINFREY, EDITOR

WE ARE PLEASED THIS MONTH TO HAVE AN EARLY LOOK AT WHAT I expect will be the definitive biography of William Clark, the man invited by Meriwether Lewis, 200 years ago next summer, to join him on an epochal exploration of the American West. The biographer is my former Time Inc. colleague Landon Y. Jones, and the piece in this issue, "Iron Will" (p. 96), tells the historically important but neglected story of Clark's life after the expedition. Clark, says Jones, "was not only the key interpreter of the undiscovered West to white America but was also the interpreter of white America to Indians."

In retrospect Jones, who was a writer at *Time* and editor of *Money* and *People* magazines, seems almost fated to tell Clark's story. He grew up in St. Louis, near where Lewis and Clark launched their expedition in 1804 and where Clark spent the last years of his life; attended Clark Elementary School, named after the general; edited the pair's journals (*The Essential Lewis and Clark*, HarperCollins, 2000) and serves on the National Council of the Lewis and Clark Bicentennial, the group charged with planning the expedition's official commemoration.



Landon Jones (at Clark's tomb): Still shivering.

A requisite for writing this kind of book, Jones says, is "a cast-iron butt, since you spend a lot of time sitting in libraries leafing through archival collections." But fieldwork is also a must. Jones toured sites central to the Lewis and Clark adventure, from Fort Clatsop, Oregon, where they spent the winter of 1805-06 huddled against lashing rains, to Rock Island, Illinois, where there is a moving monument to Sauk warrior Black Hawk, Clark's tragic, worthy adversary. Of the places Jones visited, the most memorable was Lemhi Pass, near Dillon, Montana, where Lewis and Clark first crossed the Continental Divide. "You get there by ascending a creek that they thought was the headwaters of the Missouri," he says. "When you walk up to the crest of the pass, as they did, you look over and see—not rivers flowing down to the Pacific, as they hoped, but row after row of mountain ranges receding to the horizon. You can almost hear them gulp and say, 'Uh oh, this is going to take longer than we thought.'"

Jones also relishes his memory of the moment, sitting in the library at the Missouri Historical Society in St. Louis, when the archivist brought Clark's elkskin-bound field journal to him and Jones read what Clark wrote upon first seeing what he thought was the Pacific: "Ocian in view! O! the joy." (It was actually the estuary of the Columbia River between Oregon and Washington State.)

Says Jones: "Those words still give me a shiver."

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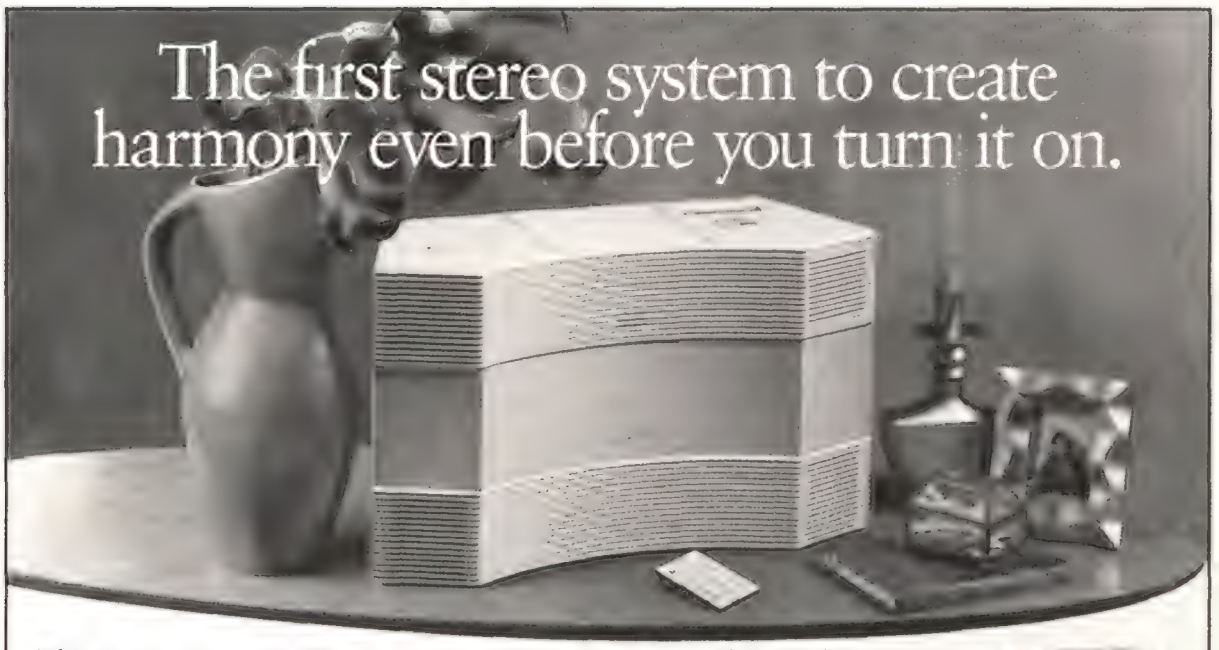

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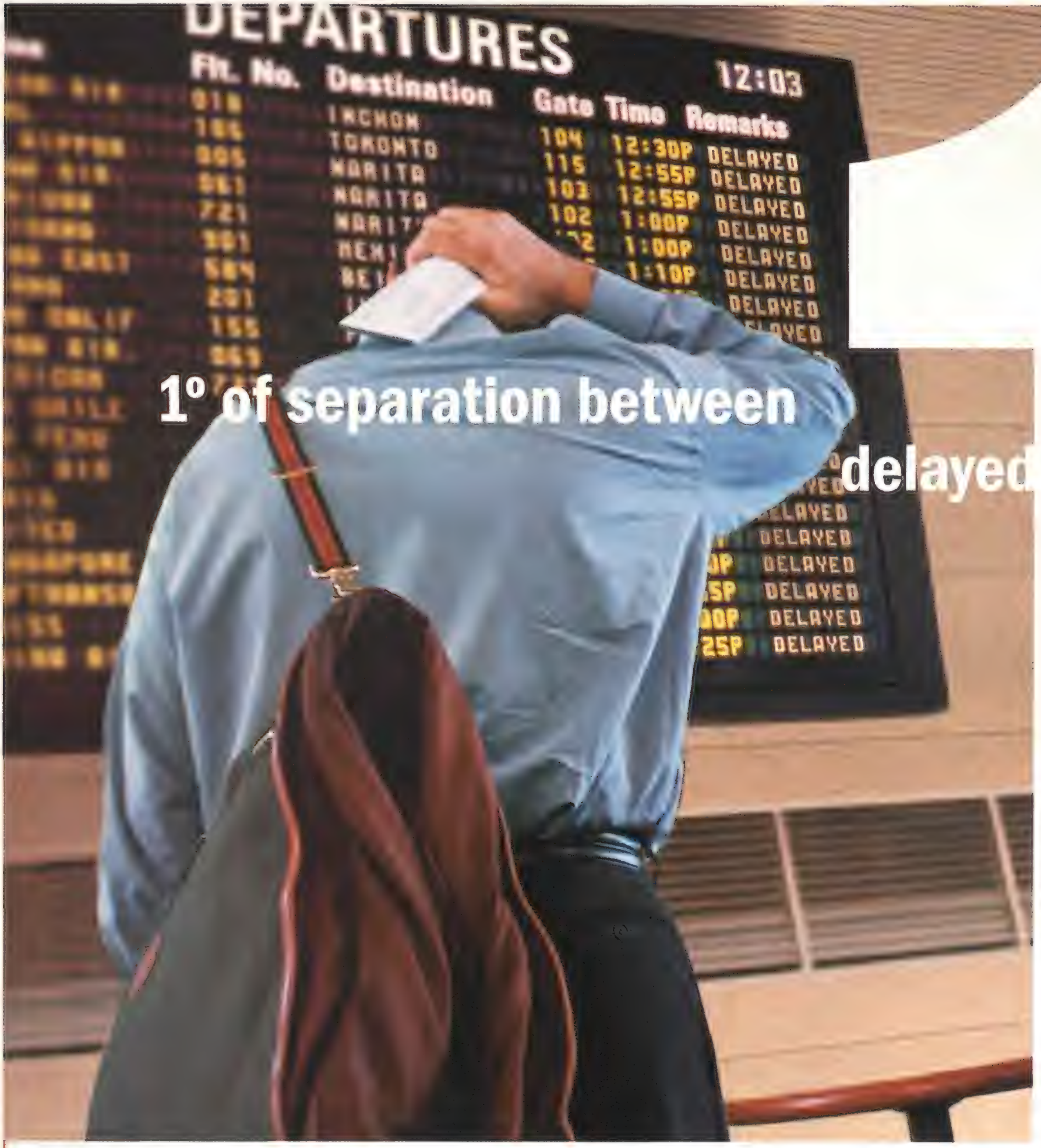

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Latino Legacies

FROM THE SECRETARY

TOO OFTEN WE FORGET: THE HISTORY OF THE UNITED States may date formally from 1776, but the history of America was already centuries old by then. There was a Hispanic presence on the continent for more than 200 years before 13 colonies on the eastern coast declared their independence from England. Indeed, the Spaniards wasted little time in colonizing the new territories Columbus revealed with his voyages. They had already claimed portions of Central and South America when, in 1565, they established St. Augustine, Florida, the first permanent settlement in territory that would one day be part of the United States. By 1607, when the British established *their* first successful settlement, at Jamestown, Virginia, writes historian Bernard Bailyn, "Spain's American dominion extended nearly 8,000 miles, from Southern California to the Straits of Magellan. . . . Spain then controlled the largest empire the Western world had seen since the fall of Rome." The Spanish flag flew over land now within the continental United States until 1821, and the Mexican flag for three decades after that.

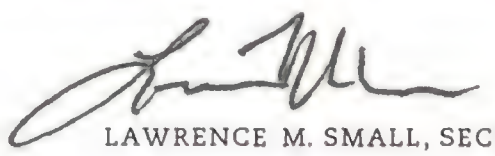
Genaro Molina's photograph of East Los Angeles broom seller Sofia Gonzales tours with the "Americanos" exhibit.

Because the founding heritage of vast regions of this country was Hispanic, no account of the past—and no understanding of the present—can be complete if it does not acknowledge that indelible cultural imprint, which is vivid still and will become even more pronounced in the decades ahead. The figures hold the future: the Latino population of the United States and Puerto Rico is now some 40 million, and more than 40 percent of it is under 25 years old.

The Smithsonian came late to a formal recognition of the Latino contribution to the history of the nation, but we're determined to make up for lost time. In 1997, the Board of Regents established the Center for Latino Initiatives. (The word "Latino" encompasses a range of specific ethnic identifications.) Its mission can be stated simply enough: to generate and advance knowledge and understanding of the Latino role in U.S. history, culture, arts, music and science. To that simply put but remarkably ambitious mission there are two principal aspects. The first looks to developments within the Smithsonian, where the center will build on the substantial base of resources already devoted to reflecting Latino achievement—exhibitions by our individual museums of art and history, as well as lectures, symposia and concerts. The Smithsonian Institution Traveling Exhibition Service, for example, has sent more than a dozen Latino-related shows on tour in the past decade. And in 2001 our Affiliations Program organized a Latino Alliance that links 26 institutions in seven states, the District of Columbia, Panama and Puerto Rico.

The second aspect of the center's mission is to get the message of Latino contributions out to communities, schools and cultural institutions across America—through exhibitions, educational programs and the continued enhancement of the Latino Virtual Gallery on the center's Web site. In the coming year, one of the center's priorities will be research for a new traveling exhibition honoring 100 Hispanic Americans of conspicuous achievement. The hope is that their individual stories will stir fires of pride and aspiration in visitors to the show.

The Latino presence in the United States is not just growing but becoming more various, with consequences for the social, cultural and political life of the nation that are at once apparent and unpredictable. The Smithsonian needs to document these changes no less than it needs to take account of the past. We're committed to sustaining the Center for Latino Initiatives as a lively forum within the Institution and a strong voice without. Its message is unmistakable: let the profile of the nation's past be drawn more truly and the promise of its future be made more complete.



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Readers respond to the June issue.

POWER PLAY

"ICELAND BE DAMMED" DESCRIBED THE threat to eastern Iceland's great wilderness posed by the government's plan to dam the region's glacier-born rivers and put much of the area underwater to provide hydropower for a large aluminum smelter. If it goes forward, an American manufacturer, Alcoa, will own and operate the smelter for which this wonderful wilderness will be sacrificed. It seems that political and financial concerns, rather than environmental ones, are paramount in the decision-making process in this case.

Daniel Klein and Freke Vuijst
Great Barrington, Massachusetts

THE HYDROPOWER PROJECT IN WESTERN Iceland is intended to help save the environment. It is part of the nation's program to eliminate the use of petroleum as a power-plant fuel.

Robert E. Shields
Silver City, Nevada

COMET TRAILS

THE COMET AIRCRAFT MAY HAVE BEEN the first passenger jet to fly a scheduled route ("Comet's Tale"), but the first jet passengers traveled from Toronto to New York in a nonscheduled flight aboard an Avro Canada Jetliner April 18, 1950, two years before the Comet took off. That aviation milestone is often ignored.

Robert Millar
Parry Sound, Ontario

IT IS A CURIOUS INSTANCE OF LIFE imitating art that Nevil Shute's 1948 novel, *No Highway*, posits metal fatigue as a cause of airline disasters four years before the real-life De Havilland Comet tragedies. The novel's hero, an aeronautical engineer, dabbles in the occult and, using an instrument similar to a Ouija board, pinpoints a key piece of a crashed plane and thus vindicates his theory. When the cause of the Comet crashes was found to be metal fatigue, it was as if Shute, himself an aeronautical engineer, had peeked at the future.

Alan Kitchen
Pittsburgh, Pennsylvania

GOOD SPORTS

"NOT A LOT OF OCELOTS" SHOWED how sport hunters today work for the good of the animals (by spurring creation of game preserves where hunters pursue legal quarry, and where ocelots, which are endangered and not hunted, can survive). Hunters have a long history of supporting wildlife and habitat development with their dollars, time and groups such as the Wild Turkey Federation, Rocky Mountain Elk Foundation, and Safari Club International.

Brett Woodard
Anderson, South Carolina

HORSING AROUND

"MA" MEANS HORSE IN CHINESE, AND it is now the Chinese Year of the Horse. Perhaps the coincidence gave a boost to cellist Yo-Yo Ma, the prime mover behind the Smithsonian Institution's "Silk Road" Folklife Festival. Might it also be why he posed holding not a cello but a *morin khuur*—a Mongolian horse-head fiddle?

Howard B. Fan
Honolulu, Hawaii

THOSE OLD HOUSES

THE SMITHSONIAN OWNS OTHER COMplete houses besides the one described in "Old House, New Home." In 1955, my grandmother, Mrs. Arthur M. Greenwood, gave the Institution a 17th-century house (then the earliest known example of frame building in America) that was to be erected in the National Museum of Natural History. But it was only partly installed, and now languishes in storage.

Deborah L. Hertz
Duncans Mills, California

CONVOLUTED CODEX

"MOUNTAIN OF THE LORD" COVERED A lot of ground but did not mention that in 1859 the oldest Greek text of the New Testament then known to scholars was discovered by Konstantin von Tischendorf in the Monastery of St. Katherine. The subsequent story of the fourth-century Codex Sinaiticus is a complex and convoluted one, but the British Museum eventually acquired it in 1933, and it is now housed in the British Library.

Warren Robinson
Fairway, Kansas

Send letters for this column to LettersEd@simag.si.edu or to **Letters Editor, SMITHSONIAN, MRC 951, P.O. Box 37012, Washington, D.C. 20013-7012.** Please include your telephone number and address. Letters may be edited for clarity and length. Send queries and comments about the Smithsonian Institution to info@info.si.edu or to VIARC, Public Inquiry Mail Service, P.O. Box 37012, Washington, D.C. 20013-7012.

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Brief Summary (For full Prescribing Information, see package insert.)

INDICATIONS AND USAGE: Allergic Rhinitis: CLARINEX Tablets 5 mg are indicated for the relief of the nasal and non-nasal symptoms of allergic rhinitis (seasonal and perennial) in patients 12 years of age and older.

Chronic Idiopathic Urticaria: CLARINEX Tablets are indicated for the symptomatic relief of pruritus, reduction in the number of hives, and size of hives, in patients with chronic idiopathic urticaria 12 years of age and older.

CONTRAINDICATIONS: CLARINEX Tablets 5 mg are contraindicated in patients who are hypersensitive to this medication or to any of its ingredients, or to loratadine.

PRECAUTIONS: Carcinogenesis, Mutagenesis, Impairment of Fertility: The carcinogenic potential of desloratadine was assessed using loratadine studies. In an 18-month study in mice and a 2-year study in rats, loratadine was administered in the diet at doses up to 40 mg/kg/day in mice (estimated desloratadine and desloratadine metabolite exposures were approximately 3 times the AUC in humans at the recommended daily oral dose) and 25 mg/kg/day in rats (estimated desloratadine and desloratadine metabolite exposures were approximately 30 times the AUC in humans at the recommended daily oral dose). Male mice given 40 mg/kg/day loratadine had a significantly higher incidence of hepatocellular tumors (combined adenomas and carcinomas) than concurrent controls. In rats, a significantly higher incidence of hepatocellular tumors (combined adenomas and carcinomas) was observed in males given 10 mg/kg/day and in males and females given 25 mg/kg/day. The estimated desloratadine and desloratadine metabolite exposures of rats given 10 mg/kg of loratadine were approximately 7 times the AUC in humans at the recommended daily oral dose. The clinical significance of these findings during long-term use of desloratadine is not known.

In genotoxicity studies with desloratadine, there was no evidence of genotoxic potential in a reverse mutation assay (*Salmonella/E. coli* mammalian microsome bacterial mutagenicity assay) or in two assays for chromosomal aberrations (human peripheral blood lymphocyte clastogenicity assay and mouse bone marrow micronucleus assay).

There was no effect on female fertility in rats at desloratadine doses up to 24 mg/kg/day (estimated desloratadine and desloratadine metabolite exposures were approximately 130 times the AUC in humans at the recommended daily oral dose). A male specific decrease in fertility, demonstrated by reduced female conception rates, decreased sperm numbers and motility, and histopathologic testicular changes, occurred at an oral desloratadine dose of 12 mg/kg in rats (estimated desloratadine exposures were approximately 45 times the AUC in humans at the recommended daily oral dose). Desloratadine had no effect on fertility in rats at an oral dose of 3 mg/kg/day (estimated desloratadine and desloratadine metabolite exposures were approximately 8 times the AUC in humans at the recommended daily oral dose).

Pregnancy Category C: Desloratadine was not teratogenic in rats at doses up to 48 mg/kg/day (estimated desloratadine and desloratadine metabolite exposures were approximately 210 times the AUC in humans at the recommended daily oral dose) or in rabbits at doses up to 60 mg/kg/day (estimated desloratadine exposures were approximately 230 times the AUC in humans at the recommended daily oral dose). In a separate study, an increase in preimplantation loss and a decreased number of implantations and fetuses were noted in female rats at 24 mg/kg (estimated desloratadine and desloratadine metabolite exposures were approximately 120 times the AUC in humans at the recommended daily oral dose). Reduced body weight and slow righting reflex were reported in pups at doses of 9 mg/kg/day or greater (estimated desloratadine and desloratadine metabolite exposures were approximately 50 times or greater than the AUC in humans at the recommended daily oral dose). Desloratadine had no effect on pup development at an oral dose of 3 mg/kg/day (estimated desloratadine and desloratadine metabolite exposures were approximately 7 times the AUC in humans at the recommended daily oral dose). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, desloratadine should be used during pregnancy only if clearly needed.

Nursing Mothers: Desloratadine passes into breast milk, therefore a decision should be made whether to discontinue nursing or to discontinue desloratadine, taking into account the importance of the drug to the mother.

Pediatric Use: The safety and effectiveness of CLARINEX Tablets in pediatric patients under 12 years of age have not been established.

Geriatric Use: Clinical studies of desloratadine did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences between the elderly and younger patients. In general, dose selection for an elderly patient should be cautious, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy. (see **CLINICAL PHARMACOLOGY – Special Populations**).

Information for Patients: Patients should be instructed to use CLARINEX Tablets as directed. As there are no food effects on bioavailability, patients can be instructed that CLARINEX Tablets may be taken without regard to meals. Patients should be advised not to increase the dose or dosing frequency as studies have not demonstrated increased effectiveness at higher doses and somnolence may occur.

ADVERSE REACTIONS: Allergic Rhinitis: In multiple-dose placebo-controlled trials, 2,834 patients received CLARINEX Tablets at doses of 2.5 mg to 20 mg daily, of whom 1,655 patients received the recommended daily dose of 5 mg. In patients receiving 5 mg daily, the rate of adverse events was similar between CLARINEX and placebo-treated patients. The percent of patients who withdrew prematurely due to adverse events was 2.4% in the CLARINEX group and 2.6% in the placebo group. There were no serious adverse events in these trials in patients receiving desloratadine. All adverse events that were reported by greater than or equal to 2% of patients who received the recommended daily dose of CLARINEX Tablets (5.0 mg once-daily), and that were more common with CLARINEX Tablet than placebo, are listed in Table 5.

Table 5

Incidence of Adverse Events Reported by ≥ 2% of Allergic Rhinitis Patients in Placebo-Controlled, Multiple-Dose Clinical Trials

Adverse Experience	CLARINEX Tablets 5 mg (n=1,655)	Placebo (n=1,652)
Pharyngitis	4.1%	2.0%
Dry Mouth	3.0%	1.9%
Myalgia	2.1%	1.8%
Fatigue	2.1%	1.2%
Somnolence	2.1%	1.8%
Dysmenorrhea	2.1%	1.6%

The frequency and magnitude of laboratory and electrocardiographic abnormalities were similar in CLARINEX and placebo-treated patients.

There were no differences in adverse events for subgroups of patients as defined by gender, age, or race.

Chronic Idiopathic Urticaria: In multiple-dose, placebo-controlled trials of chronic idiopathic urticaria, 211 patients received CLARINEX Tablets and 205 received placebo. Adverse events that were reported by greater than or equal to 2% of patients who received CLARINEX Tablets and that were more common with CLARINEX than placebo were (rates for CLARINEX and placebo, respectively): headache (14%, 13%), nausea (5%, 2%), fatigue (5%, 1%), dizziness (4%, 3%), pharyngitis (3%, 2%), dyspepsia (3%, 1%), and myalgia (3%, 1%).

The following spontaneous adverse events have been reported during the marketing of desloratadine: tachycardia, and rarely hypersensitivity reactions (such as rash, pruritus, urticaria, edema, dyspnea, and anaphylaxis), and elevated liver enzymes including bilirubin.

DRUG ABUSE AND DEPENDENCE: There is no information to indicate that abuse or dependency occurs with CLARINEX Tablets.

OVERDOSAGE: Information regarding acute overdosage is limited to experience from clinical trials conducted during the development of the CLARINEX product. In a dose ranging trial, at doses of 10 mg and 20 mg/day somnolence was reported.

Single daily doses of 45 mg were given to normal male and female volunteers for 10 days. All ECGs obtained in this study were manually read in a blinded fashion by a cardiologist. In CLARINEX-treated subjects, there was an increase in mean heart rate of 9.2 bpm relative to placebo. The QT interval was corrected for heart rate (QT_c) by both the Bazett and Fridericia methods. Using the QT_c (Bazett) there was a mean increase of 8.1 msec in CLARINEX-treated subjects relative to placebo. Using QT_c (Fridericia) there was a mean increase of 0.4 msec in CLARINEX-treated subjects relative to placebo. No clinically relevant adverse events were reported.

In the event of overdose, consider standard measures to remove any unabsorbed drug. Symptomatic and supportive treatment is recommended. Desloratadine and 3-hydroxydesloratadine are not eliminated by hemodialysis.

Lethality occurred in rats at oral doses of 250 mg/kg or greater (estimated desloratadine and desloratadine metabolite exposures were approximately 120 times the AUC in humans at the recommended daily oral dose). The oral median lethal dose in mice was 353 mg/kg (estimated desloratadine exposures were approximately 290 times the human daily oral dose on a mg/m^2 basis). No deaths occurred at oral doses up to 250 mg/kg in monkeys (estimated desloratadine exposures were approximately 810 times the human daily oral dose on a mg/m^2 basis).

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ELLIOTT ERWITT/MAGNUM PHOTOS

Just a Snapshot?

BY ADRIANA LESHKO

THE PHOTOGRAPH THAT ELLIOTT ERWITT made in 1953 of his newborn daughter and her mother in the family's modest Manhattan apartment is among the most widely reproduced of its time, having appeared in venues as different as Edward Steichen's seminal 1955 photography exhibition (and book) "Family of Man," and in magazines, on postcards and even in drug company advertisements. But if *Mother and Child* is a mainstay of modern photography, to the mischievous Erwitt, 74, it's just "a family picture of my first child, my first wife and my cat," he says. "I still see it as a snapshot. But it happens to be a pretty good one."

The comment—wry, unpretentious—is vintage Erwitt. Half a century after taking that "snapshot," which helped launch his career, he's celebrated for his photojournalism, which covers Nixon and Khrushchev's 1959 "kitchen debate" and Jackie Kennedy at JFK's funeral, and for his often whimsical street photographs. A new exhibition of Erwitt's work appears until September 16 at Madrid's prestigious Reina Sofia Museum. Fittingly, his latest, most ambitious book is titled *Snaps*, a collection of 520 images published last fall by Phaidon. But don't call it a retrospective. "It's a bunch of pictures," says Erwitt. "I think retrospectives are bad until you're dead, and I'm still perpendicular."

The book includes *Mother and Child*, shot when his daughter Ellen was 6 days old and the photographer, just out of the Army, was 24. He had been taking pictures since

"Being a mother has made me react more emotionally to the [*Mother and Child*] picture," says Ellen Erwitt (holding son, Sam). "Grandpop" Erwitt (above, right) says he has "never been on the cutting edge—thank God." His son Misha, a photographer, took both photos in 1991.

high school—he was born in Paris, lived in Italy and moved at age 11 with his family to Los Angeles—and was already associated with the renowned photo agency Magnum, which entered the picture in a competition. It won a prize, but Erwitt declined the honor because the sponsor wanted to copyright the image and thus receive any future royalties. "That's probably one of the smartest things I've ever done," he says of his refusal. He jokes that the image paid for Ellen's education several times over.

Ellen Erwitt, now 48 and herself a mother of two, Sam, 10, and Max, 9, lives in the San Francisco Bay Area and owns a photography production firm. *Mother and Child* has been so popular, she says, "it amazes me how many people 'know' me and my family." As it happens, her parents divorced in 1962, and her mother, Lucienne Matthews, who is remarried and retired from her job as an airline agent, lives near her in Fairfax, California.

Elliott Erwitt, married for the fourth time and living in Manhattan, in an elegant Central Park West apartment and studio, fathered another five children after Ellen was born, three of whom also toil in what he calls the photography "biz." Erwitt himself has long labored as a commercial photographer, doing "workaday work" for calendars and car and software advertisements, bending his talents to "creative obedience," as he puts it. Meanwhile, he has pursued his art, or "amateur standing," which he says means taking "pictures of whatever interests me." He has little patience for elaborate aesthetic theories. "Photographers as a group are pompous asses," he says. "Photography is so simple that very often they need to use big words to justify what they do." One of his heroes is Henri Cartier-Bresson, who he says is "the most important photographer of our time" and yet "doesn't posture."

Several years ago, the ever-industrious Erwitt realized that his voluminous photo files held hundreds of pictures of dogs—alone and with people—many shot at pooch level and inviting amusing comparison of master and beast. "When you walk around and take pictures, you see a lot of dogs, so they get into the pictures," he says. "I thought, well, there's a subject, people are interested in dogs, so why not put it together and see if it can be a book?" He did. His 1997 book *DogDogs* has sold 300,000 copies.

Critics sometimes knock Erwitt's photographs as slight or sentimental. They've said as much about *Mother and Child*, but the photograph has an undeniable appeal, whether it be the disheveled naturalism, which reflected a bohemian spirit then taking root in postwar American art, or the witty contrast of the cat watching the emotional intensity unfolding in front of it with cool, coiled remove. In an essay in *Snaps*, writer Charles Flowers recalls the impact the picture had on him when, as a young man, he first saw it in *Life* magazine. "I went frequently into its world," he says, adding that even today the photograph offers him the "gift of peace." Ellen Erwitt says the picture exemplifies "how beautifully simple a black-and-white picture can be," conveying "a feeling, a moment or story with no artifice."

Her father prefers not to explain the image. "What's there to describe?" Elliott Erwitt says. "A picture's worth a thousand words, right?"

Adriana Leshko is a freelance writer in New York City.

MISHA ERWITT (2)

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POINTS OF INTEREST

They Turned the Tide

MEMBERS OF THE DOOLITTLE RAIDERS CELEBRATE THE 60TH ANNIVERSARY OF THE U.S. ANSWER TO PEARL HARBOR

BY ROBERT F. HOWE

"We accomplished what we did because we had a great leader," says Bill Bower (above, signing the belly of a B-25), who piloted the 12th bomber to take off from the *Hornet*.

ONE BY ONE, 14 OF THE DOOLITTLE Raiders, 3 in wheelchairs and several slightly stooped by age and the solemnity of the occasion, approach a wooden case holding 80 silver goblets. Each removes a cup engraved with his name and accepts a splash of brandy.

The old warriors form a loose semicircle. Maj. Gen. David M. Jones, 88, begins: "Gentlemen, your attention. I will now call the names of our departed." As the former pilot names each colleague who either fell in battle or has died since the end of World War II, he is answered with an emphatic "Here" from a surviving crew member, an acknowledgment that while a man's body may be gone, his spirit lives on. In a moment of silence to honor two men who died since the group last met a year ago, two goblets are turned upside down.

Jones reads the last name, then lifts his chalice: "Gentlemen, to our good friends who have gone."

This simple yet poignant annual ceremony, never before seen by the public, took place April 18 in Columbia, South Carolina, where the famous squadron known as the Doolittle Raiders was first mustered. Exactly 60 years earlier, under the legendary leadership of then-Lt. Col. James H. Doolittle, the Raiders performed one of the most daring military actions ever carried out. Just as the United States seemed on the verge of military collapse in the Pacific, these brave men launched a seemingly suicidal bombing run on a supremely confident Japan.

Memorialized in the classic book and subsequent film *Thirty Seconds Over Tokyo*—as well as last year's breathless Hollywood romance, *Pearl Harbor*—the mission has been remembered at Raider reunions held nearly every year since 1947. This year's reunion in Columbia was one of the largest and most elaborate appreciations; it was certainly among the most emotional. Over five days, 14 of the surviving 23 Raiders (2 more have died since April) were feted with sold-out banquets, the reading of an impassioned note from President Bush, speeches by radio host Oliver North and retired astronaut Brig. Gen. Charles Duke, a parade down Main Street and an air show featuring meticulously maintained B-25 bombers similar to the 16 flown by the Raiders. History buffs of all ages asked the men to autograph posters, vintage photographs, model planes, baseballs and even the belly of one of the B-25s.

"They had their first union here, so we felt that they should have one of their last reunions here," said Brig. Gen. Carey Woodson Randall, chairman of the Columbia-based Celebrate Freedom Foundation, which hosted the event. "Bombing Japan just a few months after Pearl Harbor was a total shock. No one thought it could be done."

To understand the extraordinary derring-do of the Raiders, one needs to remember the circumstances of the time. The Japanese had just upended U.S. attempts to stay out of World War II with their devastating surprise attack on Pearl Harbor on Sunday morning, December 7, 1941.

MILTON MORRIS

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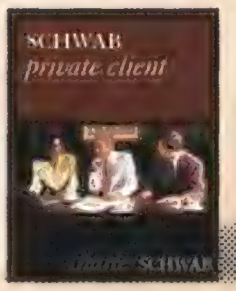

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Doolittle (above, center, at the fifth reunion in 1950) came out of retirement to lead the high-risk raid.

And Allied troops were being punished in the Philippines. An angry President Franklin D. Roosevelt demanded that his military brass design a strategy to strike back at the Japanese and show that the United States wasn't about to roll over. The improbable solution: the Doolittle Raid.

Today it's almost routine that bombers take off from fortress-like carriers, refuel in midair and travel thousands of miles to pummel enemies with virtual impunity. But consider what these men faced: only two B-25s—medium-range, twin-engine bombers—had ever taken off from the deck of an aircraft carrier (and those on a test flight in friendly waters). The bulkiness of these aircraft made landing on a ship impossible, which meant that they would have to find a safe landing strip after they hit their targets. Plus, not one of the 16 pilots (each with a crew of four) had flown any kind of plane off a ship at sea.

Despite these obstacles, a small carrier task force under the command of Adm. William Frederick "Bull" Halsey, Jr., assembled at a top secret location in the Pacific off Hawaii in April 1942. Their orders were to bring the carrier USS *Hornet* and the Raiders to within 450 miles of Tokyo, a distance that the planes could cover and still have enough fuel to fly deep into China, beyond the grasp of the Japanese. Bad luck, however, struck even before a single plane took off. Six hundred fifty miles off Tokyo, the ships stumbled upon a Japanese picketboat, which they promptly blew out of the water. Halsey and Doolittle, assuming that the enemy crew had alerted mainland Japan of an impending attack, agreed that the Raiders had to take off immediately; otherwise, the B-25s would have to be dumped overboard so that the *Hornet* could scramble its own fighters.

Doolittle did not hesitate, ordering his crews to start their engines. Two hundred miles short of their planned takeoff point, each Raider understood that even with the extra fuel they had hurriedly loaded on board, they might have to ditch their airplanes into the ocean or parachute into Japanese-held territory. To make matters worse, an unexpected squall sent waves arcing over the carrier's deck.

It's almost impossible to imagine the mind-set of the Raiders. These men had volunteered only several weeks earlier for a secret mission that Doolittle warned could cost them their lives. But they didn't learn that they would fly right down the throat of the Japanese empire until they boarded the *Hornet*. Still, the Raiders had a major weapon at their disposal in the person of Doolittle. Although of slight stature, he was a man of towering accomplishment. Not only had he won accolades as one of America's top test and racing pilots, he had also earned a PhD in aeronautical engineering at MIT and managed the aviation division at Shell Oil Company. If anybody could pull this off, it was "Jimmy" Doolittle.

"The moment we feared most was the takeoff, but strangely enough it was the easiest part of the mission," recalls Jack Sims, 83, copilot of the 14th plane to take off from the carrier. "We had the heavy wind coming across the deck, plus the acceleration of the ship, so we had more speed than we needed."

With no time to assemble into a conventional formation, each plane was on its own, skimming along wave tops to avoid detection. As they dropped their bombs (each carried four) on factories or military sites in five Japanese cities, they were met with limited ground fire; only a few enemy fighters mobilized. Some historians contend that resistance was slight because the Japanese mistook the B-25s for their own planes on an air raid exercise. Whatever the reason, not one of the American planes was shot down.

Once past Japan, four crews ditched their aircraft in the water or near shore; other crews bailed out over land. Only three men died as a result, although eight were captured by the Japanese, including Chase J. Nielsen, now 85, navigator of the sixth crew. "It was already dark, and the pilot asked me how much time we had before we got to the coast," he says. "I said two minutes. But the red light flashing on the panel said we were out of fuel already, so we took our chances on ditching. It tore the plane up and killed two of us." The remaining three were captured and subjected to what Nielsen says was a kangaroo court. "We were ordered executed, and then my sentence was commuted to life in prison in solitary confinement," he remembers. One of his colleagues perished in prison, while the pilot was executed by a firing squad.

Bombardier Jacob DeShazer, 89, was on the last plane to leave the deck of the *Hornet* and a member of the only other crew taken prisoner by the Japanese. He was interrogated at length and tortured. Just as he was losing hope, he was given a Bible. "The Bible says that if we believe in Jesus in our hearts, we'd be saved," he says. "Boy, when I read that and they were threatening to cut our heads off at any moment, I just felt like I'm free, I'm ready to die to do whatever God wants me to do." Two of his crewmates were executed. After three years and four months in prison, the war ended and DeShazer returned to America.

But he didn't stay stateside long. In 1948, he returned to

BETTMANN/CORBIS

Japan as a missionary and spent the next 30 years introducing Christianity to the Japanese. One of his converts, Mitsuo Fuchida, had led the Japanese attack on Pearl Harbor.

A whiff of mystery surrounds the fate of one plane, the eighth to take off. After dropping his payload, Capt. Edward York steered toward Russia and landed near Vladivostok. Official records indicate that the pilot chose the course because Russia was close and he was low on fuel, but Nolan Herndon, now 83, and the plane's navigator, isn't so sure. He suspects that the maneuver was designed by military leaders to test the loyalties of the Russians, who were nominally U.S. allies but accommodated the Japanese to avoid confrontations on their eastern borders. In fact, Russian officials imprisoned York and his crew. All five escaped 14 months later with the help of local smugglers, who led them through the treacherous mountains of Afghanistan.

Most of the men, including Doolittle, found their way to safety with the help of Chinese farmers and guerrillas. Though all the American planes were lost, historians consider the mission a great success. Because of it, Japan was forced to recall top officers from the Pacific front to plan a defense against further assaults on Tokyo. "It was the first good news that the American public and our allies had gotten," says Thomas Griffin, 86, navigator of the ninth plane. "Everything was bad news up until the time of this raid. Here, four months after Pearl Harbor, we were over there dropping bombs." Says Williamson Murray, a senior fellow at the Institute for Defense Analyses outside Washington, D.C., "The Doolittle Raid clearly played a major role in pushing the Japanese to launch the Midway operation before they were ready, which led to a loss of four carriers and 350 top airmen. That was a turning point in the war."

For most, this year's reunion was an inspiring celebration of memories. But for some, it was an opportunity to look to the future. Columbia resident Hope Mizzell, 31, brought her daughter Sybil to one of the dinners. Just 17 months old, Sybil probably won't recall the night she met Doolittle's Raiders. But her mother felt it was important that she be there: "I was hoping to get a picture of her with one of the Raiders. She doesn't understand it now, but some day she will, and with a photograph, she'll see that she participated in something special."

She got her picture.

California freelancer Robert F. Howe describes as "breathtaking" the experience of flying in a B-25, which he did while reporting this story.

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Macho in Miniature

FOR NEARLY 40 YEARS, G.I. JOE HAS BEEN ON AMERICA'S FRONT LINES—IN TOY BOXES FROM COAST TO COAST

BY ED LIEBOWITZ

"DON'T YOU DARE CALL G.I. JOE A *doll*!" Hasbro toy company president Merrill Hassenfeld charged his sales force at the 1964 Toy Fair, in New York. "If I overhear you talking to a customer about a *doll*, we're not shipping any G.I. Joes to you."

G.I. Joe was a doll, of course, but Hassenfeld's designers had done all they could to make him the toughest, most masculine doll ever produced. Ken, companion of the glamorous and by then already ubiquitous Barbie, sported Malibu shorts and a peaches-and-cream complexion. The inaugural 1964 G.I. Joe, as preserved in the Smithsonian's social history collection at the National Museum of American History (NMAH), cuts a radically different figure. In his khaki uniform and combat boots, he stands an imposing 11 1/2 inches tall. A battle scar creases his right cheek, and an aluminum dog tag dangles from his neck. Hasbro would furnish him with M-1 rifles, machine guns, bayonets and flamethrowers—a far cry from Barbie's purses and pearls.

In the 1970s, Joe transformed into Atomic Man, a bionic bruiser whose fearlessness extended to cobras.

While Barbie had little articulation in her limbs, G.I. Joe debuted as "America's Moveable Fighting Man," with knees that bent and wrists that pivoted to take better aim at any enemy. "Barbie is pretty stiff, with her feet perpetually deformed into high-heeled shoes," says Barbara Clark Smith, a curator of social history at NMAH. "She's essentially a model for viewing by others. She relates back to the historic restrictions of women's physical movement—to corsets and long skirts. While Joe is active, Barbie is pretty inflexible, waiting to be asked to the prom."

G.I. Joe was the concept of Larry Reiner, an executive at the Ideal Toy Company, one of Hasbro's competitors. But when Ideal balked at Reiner's soldier-doll—as recounted in Vincent Santelmo's *The Complete Encyclopedia to G.I. Joe*—Reiner took his brainstorm to Hasbro. Initially, Merrill Hassenfeld had grave reservations, but his product development director, Don Levine, overcame them. (As for Reiner, he never really cashed in on his idea. He signed for a flat fee, amounting to $35,000 from Hasbro, but neglected to negotiate a royalty agreement that could have earned him tens of millions.)

"When the country's not at war," Levine told his colleagues, "military toys do very well." Ironically, G.I. Joe came out the same year—1964—that President Lyndon Johnson used the Gulf of Tonkin incident to up the ante in Vietnam. Until that war tore the country asunder, G.I. Joe thrived. Sales reached $36.5 million in 1965. That was also the year that Joe gained some black comrades in arms, although the face of the African-American G.I. Joe doll was identical to that of his white counterpart, merely painted brown. Joe got a new mission and a new uniform. The original had been modeled after the infantrymen, sailors, marines and pilots of World War II and Korea—the war of dads and granddads. In 1966, Hasbro outfitted Joe for Vietnam, giving him a green beret, an M-16 and the rocket launcher of U.S. Army Special Forces.

But according to Santelmo, orders for Joe ground to a near halt in the summer of 1968 as the little guy found himself adrift in the same hostile home front as veterans returning from Vietnam. Some consumers even called G.I. Joe's Americanism into question. Since 1964, G.I. Joe heads had been produced in Hong Kong, then shipped to Hasbro's U.S. plants to be fastened atop American bodies. His uniforms came from Hong Kong, Japan and Taiwan. One angry mom wrote to Hasbro to say that "the true American soldier is not outfitted with clothes made in Asia." An-

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other, quoted in the *New York Times* magazine and from the other end of the political spectrum, asked, "If we're going to have toys to teach our children about war, . . . why not have a G.I. Joe who bleeds when his body is punctured by shrapnel, or screams when any one of his 21 moveable parts are blown off?"

In 1967, Hasbro had introduced a talking G.I. Joe, and the doll predictably barked battle commands. In reality, however, he was not so resolute, and under continued cultural cross fire, he abandoned the battlefield entirely in 1969. Joe had begun his existence by closeting his identity as a doll; now, he would survive by stowing his uniform and becoming, in effect, the greatest draft dodger in U.S. toy history. Hasbro repackaged Joe as a freelance, *civilian* adventurer. As Joe drifted into the '70s, the round "Adventure Team" medallion he wore was more peace sign than dog tag. He sprouted big fuzzy hair and a bushy beard that would never make it past a Marine barber. And he took on all sorts of trendy attributes, from a Bruce Lee-like kung fu grip to Six-Million-Dollar-Man-style bionic limbs.

Variations on a theme: G.I. Joe became both a kung fu warrior and a fully outfitted firefighter.

On his far-flung travels away from battle zones, the AWOL soldier found new foes to fight. He did combat with giant clams, spy sharks, pygmy gorillas, massive spiders, white tigers, boa constrictors, mummies and abominable snowmen—anyone and anything, it seems, but actual U.S. military adversaries. Having conquered the natural and unnatural world, G.I. Joe found new opponents in outer space—"The Intruders," dumpy Neanderthal space aliens who looked like a race of squat Arnold Schwarzeneggers. Against them, Joe risked death by squeezing; a toggle on the Intruders' back lifted beefy arms to ensnare the man of action in an extraterrestrial bear hug.

But if Joe got caught in the Vietnam quagmire, it was the OPEC oil embargo in 1976 that almost did him in for good. Petroleum, of course, is the major component of plastic, of which the figures, vehicles and most of G.I. Joe's equipment were made. "As a result," writes Santelmo, "Hasbro found that it would have become economically unfeasible for the company to continue producing such large-scale action figures at a price that the public could afford." G.I. Joe shrank from almost a foot high to a mere three and three-quarter inches. Although he returned, in his pygmy incarnation, to limited military action in the early years of the Reagan administration, the downsized Joe continued to be far more preoccupied fighting amorphous enemies like Golobulus, Snow Serpent, Gnawgahyde, Dr. Mindbender and Toxo-Viper, a destroyer of the environment.

Then came the Persian Gulf War and, with it, a renewal of patriotism. And when crude oil prices dipped after that conflict, Joe swelled to his earlier size. But new antagonists included a group calling itself the Barbie Liberation Organization (BLO). In 1993, this cabal of prankish artists bought several hundred "Teen Talk" Barbies and Talking G.I. Joe Electronic Battle Command Dukes, switched their voice boxes and surreptitiously returned them to toy stores. Brushing Barbie's long blonde hair, an unsuspecting doll owner might hear Barbie cry out: "Eat lead, Cobra," or "Attack, with heavy firepower." G.I. Joe suffered similar indignities. The BLO sent the Smithsonian a "postop" G.I. Joe, who, in his best Barbie soprano voice, warbles such memorable phrases as "Let's plan our dream wedding," "I love to try on clothes" and "Ken's such a dream."

In today's patriotic climate, G.I. Joe once again stands ready to take on anything from al-Qaida to the axis of evil. A 10th Mountain Division Joe, released recently, wears the same uniform, insignia and battle gear as American troops who served in Bosnia and Afghanistan, while another Joe does duty as an Army Ranger. "Currently on the shelves you'll find representatives of four branches of the service," says Derryl DePriest, Hasbro's marketing director. "We bring G.I. Joe into a very realistic format—the clothing, the stitching and the shape of the helmet all pay homage [to the actual troops in the field]."

Like many toys nowadays, America's miniature fighting man is a product of the factories of the People's Republic of China. But no matter his size, color or country of origin, Joe's role as political weather vane will likely continue for many a campaign to come. "Joe challenged and confirmed traditional gender roles," curator Clark Smith observes. "He challenged the preconception that boys wouldn't play with dolls, while he clearly reinforces the notion of the man as warrior." Smith believes he will remain America's preeminent playtime paradox. "He reflects the changing and confused thinking of what we want boys to aspire to, what we want men to be—and whether we want to admit what battles we're really in."

Writer Ed Liebowitz is based in Los Angeles.

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CONTRAINDICATIONS

PROCRIT is contraindicated in patients with:

1) Uncontrolled hypertension.
2) Known hypersensitivity to mammalian cell-derived products.
3) Known hypersensitivity to Albumin (Human).

WARNINGS

Pediatric Use: The multidose preserved formulation contains benzyl alcohol. Benzyl alcohol has been reported to be associated with an increased incidence of neurological and other complications in premature infants, which are sometimes fatal.

PRECAUTIONS

The parenteral administration of any biologic product should be attended by appropriate precautions in case allergic or other untoward reactions occur (see CONTRAINDICATIONS). In clinical trials, while transient rashes were occasionally observed concurrently with PROCRIT therapy, no serious allergic or anaphylactic reactions were reported. (See ADVERSE REACTIONS for more information regarding allergic reactions.)

The safety and efficacy of PROCRIT therapy have not been established in patients with a known history of a seizure disorder or underlying hematologic disease (eg, sickle cell anemia, myelodysplastic syndromes, or hypercoagulable disorders).

In some female patients, menses have resumed following PROCRIT therapy; the possibility of pregnancy should be discussed and the need for contraception evaluated.

Hematology: Exacerbation of porphyria has been observed rarely in patients with chronic renal failure (CRF) treated with PROCRIT. However, PROCRIT has not caused increased urinary excretion of porphyrin metabolites in normal volunteers, even in the presence of a rapid erythropoietic response. Nevertheless, PROCRIT should be used with caution in patients with known porphyria.

In preclinical studies in dogs and rats, but not in monkeys, PROCRIT therapy was associated with subclinical bone marrow fibrosis. Therefore, cancer patients should have hematocrit (HCT) measured once a week (QW) until HCT has been stabilized, and measured periodically thereafter.

Delayed or Diminished Response: If the patient fails to respond or to maintain a response to doses within the recommended dosing range, the following etiologies should be considered and evaluated: 1) Iron deficiency: Virtually all patients will eventually require supplemental iron therapy (see Iron Evaluation). 2) Underlying infectious, inflammatory, or malignant processes. 3) Occult blood loss. 4) Underlying hematologic diseases (ie, thalassemia, refractory anemia, or other myelodysplastic disorders). 5) Vitamin deficiencies: folic acid or vitamin B12. 6) Hemolysis. 7) Aluminum intoxication. 8) Osteitis fibrosa cystica.

Iron Evaluation: During PROCRIT therapy, absolute or functional iron deficiency may develop. Functional iron deficiency, with normal ferritin levels but low transferrin saturation, is presumably due to the inability to mobilize iron stores rapidly enough to support increased erythropoiesis. Transferrin saturation should be at least 20% and ferritin should be at least 100 ng/mL.

Prior to and during PROCRIT therapy, the patient's iron status, including transferrin saturation (serum iron divided by iron binding capacity) and serum ferritin, should be evaluated. Virtually all patients will eventually require supplemental iron to increase or maintain transferrin saturation to levels which will adequately support erythropoiesis stimulated by PROCRIT.

Drug Interactions: No evidence of interaction of PROCRIT with other drugs was observed in the course of clinical trials.

Carcinogenesis, Mutagenesis, and Impairment of Fertility: Carcinogenic potential of PROCRIT has not been evaluated. PROCRIT does not induce bacterial gene mutation (Ames Test), chromosomal aberrations in mammalian cells, micronuclei in mice, or gene mutation at the HGPRT locus. In male and female rats treated intravenously (IV) with PROCRIT, there was a trend for slightly increased fetal wastage at doses of 100 and 500 U/kg.

Pregnancy Category C: PROCRIT has been shown to have adverse effects in rats when given in doses 5 times the human dose. There are no adequate and well-controlled studies in pregnant women. PROCRIT should be used during pregnancy only if potential benefit justifies the potential risk to the fetus.

In studies in female rats, there were decreases in body weight gain, delays in appearance of abdominal hair, delayed eyelid opening, delayed ossification, and decreases in the number of caudal vertebrae in the F1 fetuses of the 500 U/kg group. In female rats treated IV, there was a trend for slightly increased fetal wastage at doses of 100 and 500 U/kg.

Nursing Mothers: Postnatal observations of the live offspring (F1 generation) of female rats treated with PROCRIT during gestation and lactation revealed decreases in body weight gain, delays in appearance of abdominal hair, eyelid opening, and decreases in the number of caudal vertebrae in the F1 fetuses of the 500 U/kg group. It is not known whether PROCRIT is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when PROCRIT is administered to a nursing woman.

Pediatric Use: See WARNINGS, Pediatric Use.

Pediatric Cancer Patients on Chemotherapy: Published literature has reported the use of PROCRIT in approximately 64 anemic pediatric cancer patients ages 6 months to 18 years, treated with 25 to 300 U/kg subcutaneously (SC) or IV, 3 to 7 times per week. Increases in hemoglobin and decreases in transfusion requirements were noted.

Hypertension: Hypertension, associated with a significant increase in HCT, has been noted rarely in cancer patients treated with PROCRIT. Nevertheless, blood pressure (BP) in patients treated with PROCRIT should be monitored carefully, particularly in patients with an underlying history of hypertension or cardiovascular disease.

Seizures: In double-blind, placebo-controlled trials, 3.2% (N=2/63) of patients treated with PROCRIT and 2.9% (N=2/68) of placebo-treated patients had seizures. Seizures in 1.6% (N=1/63) of patients treated with PROCRIT occurred in the context of a significant increase in BP and HCT from baseline values. However, both patients treated with PROCRIT also had underlying CNS pathology which may have been related to seizure activity.

Thrombotic Events: In double-blind, placebo-controlled trials, 3.2% (N=2/63) of patients treated with PROCRIT and 11.8% (N=8/68) of placebo-treated patients had thrombotic events (eg, pulmonary embolism, cerebrovascular accident).

Growth Factor Potential: PROCRIT is a growth factor that primarily stimulates red cell production. However, the possibility that PROCRIT can act as a growth factor for any tumor type, particularly myeloid malignancies, cannot be excluded.

ADVERSE REACTIONS

Adverse experiences reported in clinical trials with PROCRIT in cancer patients were consistent with the underlying disease state. In double-blind, placebo-controlled studies of up to 3-months duration involving 131 cancer patients, adverse events with an incidence >10% in either patients treated with PROCRIT or placebo-treated patients were as indicated below.

Percent of Patients Reporting Event: Event followed by Patients Treated With PROCRIT (N=63) first, Placebo-Treated Patients (N=68) second:
Pyrexia 29%, 19%; Diarrhea 21%,[a] 7%; Nausea 17%,[b] 32%; Vomiting 17%, 15%; Edema 17%,[c] 1%; Asthenia 13%, 16%; Fatigue 13%, 15%; Shortness of Breath 13%, 9%; Paresthesia 11%, 6%; Upper Respiratory Infection 11%, 4%; Dizziness 5%, 12%; Trunk Pain 3%,[d] 16%.
[a]P=0.041; [b]P=0.069; [c]P=0.0016; [d]P=0.017.

Although some statistically significant differences between patients treated with PROCRIT and placebo-treated patients were noted, the overall safety profile of PROCRIT appeared to be consistent with the disease process of advanced cancer. During double-blind and subsequent open-label therapy in which patients (N=72 for total exposure to PROCRIT) were treated for up to 32 weeks with doses as high as 927 U/kg, the adverse experience profile of PROCRIT was consistent with the progression of advanced cancer.

Based on comparable survival data and on the percentage of patients treated with PROCRIT and placebo-treated patients who discontinued therapy due to death, disease progression or adverse experiences (22% and 13%, respectively; P=0.25), the clinical outcome in patients treated with PROCRIT and placebo-treated patients appeared to be similar. Available data from animal tumor models and measurement of proliferation of solid tumor cells from clinical biopsy specimens in response to PROCRIT suggest that PROCRIT does not potentiate tumor growth. Nevertheless, as a growth factor, the possibility that PROCRIT may potentiate growth of some tumors, particularly myeloid tumors, cannot be excluded. A randomized controlled Phase IV study is currently ongoing to further evaluate this issue.

The mean peripheral white blood cell count was unchanged following PROCRIT therapy compared to the corresponding value in placebo-treated group.

OVERDOSAGE

The maximum amount of PROCRIT that can be safely administered in single or multiple doses has not been determined. Doses of up to 1500 U/kg 3 times weekly (TIW) for 3 to 4 weeks have been administered to adults without any direct toxic effects of PROCRIT itself. Therapy with PROCRIT can result in polycythemia if the HCT is not carefully monitored and the dose appropriately adjusted. If the suggested target range is exceeded, PROCRIT may be temporarily withheld until the HCT returns to the suggested target range; PROCRIT therapy may then be resumed using a lower dose (see DOSAGE AND ADMINISTRATION). If polycythemia is of concern, phlebotomy may be indicated to decrease the HCT.

DOSAGE AND ADMINISTRATION

Baseline endogenous serum erythropoietin levels varied among patients in these trials with approximately 75% (N=83/110) having endogenous serum erythropoietin levels <132 mU/mL, and approximately 4% (N=4/110) of patients having endogenous serum erythropoietin levels >500 mU/mL. In general, patients with lower baseline serum erythropoietin levels responded more vigorously to PROCRIT than patients with higher erythropoietin levels. Although no specific serum erythropoietin level can be stipulated above which patients would be unlikely to respond to PROCRIT therapy, treatment of patients with grossly elevated serum erythropoietin levels (eg, >200 mU/mL) is not recommended. The HCT should be monitored on a weekly basis in patients receiving PROCRIT therapy until HCT becomes stable.

Starting Dose: The recommended starting dose of PROCRIT for adults is 150 U/kg SC TIW. For pediatric patients, see PRECAUTIONS, Pediatric Use.

Dose Adjustment: If the response is not satisfactory in terms of reducing transfusion requirements or increasing HCT after 8 weeks of therapy, the dose of PROCRIT can be increased up to 300 U/kg TIW. If patients have not responded satisfactorily to a PROCRIT dose of 300 U/kg TIW, it is unlikely that they will respond to higher doses of PROCRIT. If the HCT exceeds 40%, the dose of PROCRIT should be withheld until the HCT falls to 36%. The dose of PROCRIT should be reduced by 25% when treatment is resumed and titrated to maintain the desired HCT. If the initial dose of PROCRIT includes a very rapid HCT response (eg, an increase of more than 4 percentage points in any 2-week period), the dose of PROCRIT should be reduced.

STORAGE

Store at 2° to 8°C (36° to 46°F). Do not freeze or shake.

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PHENOMENA

& CURIOSITIES

Thar They Blow!

GENTLE GIANTS? NEW RESEARCH SUGGESTS THAT MALE SPERM WHALES MAY BUTT HEADS OVER FEMALES

BY KEVIN RODERICK

One of earth's largest creatures, a sperm whale can grow to 60 feet long, weigh 60 tons and swim at speeds up to 20 miles an hour.

BRANDON COLE

TO FASCINATE US, SPERM WHALES DO NOT REQUIRE vengeful tempers, like that possessed by Herman Melville's fictional white leviathan, Moby Dick, though some controversial new research suggests they may indeed have a mean streak. Their swollen, gourdlike heads contain the planet's largest brain and a prodigious reservoir of once highly prized spermaceti. They can plunge 3,000 feet below the ocean's surface in grand hour-long dives to feast on, among other things, giant squid, which are believed to use their sharp parrotlike beaks to gouge the whales' snouts in death matches in the deep dark. Ambergris, a golden material treasured by beachcombers since ancient times and used in perfumes, grows only in the gut of the sperm whale. And then there's the tale of the *Essex*, a Nantucket whaling ship whose spectacular demise in 1820 inspired Melville 31 years later to send Captain Ahab and the *Pequod* to their epic doom.

While hunting in the equatorial Pacific, the *Essex* crew encountered a sperm whale bull some 85 feet long and weighing about 80 tons. It faced the ship, spouted from its blowhole and charged, its forehead breaching the swells and its great flukes thrashing the sea to white water. The collision shook the 238-ton vessel and sundered its oak-and-copper hull. After the beast swam off, "not a word was

spoken for several minutes by any of us," the first mate recalled in an 1821 book. "All appeared to be bound in a spell of stupid consternation." Of the 20 men aboard, 12 perished trying to reach South America, 1,800 miles away, in the *Essex*'s small boats. They had steered south and east, rather than west toward the nearer Marquesas Islands, partly out of fear of cannibals—though, ironically, some *Essex* sailors ended up eating dead crewmates to survive.

The story of the whale attacking with "fury and vengeance" in its eyes, as the first mate put it, has long fueled speculation and debate about the animal's nature, especially its enormous noggin: Why so big? Melville, inspired by the *Essex* tale, implied that it was a battering ram. "It is as though the forehead of the sperm whale were paved with horses' hoofs. I do not think that any sensation lurks in it," observes Ishmael, *Moby Dick*'s narrator. But modern experts say that sperm whales, despite one or two notorious incidents, generally don't attack boats or anything else. Instead, they say, the mighty whale reigns as a gentle giant of the sea.

"Forehead to Forehead I meet thee," Captain Ahab dares Moby Dick in Melville's 19th-century epic.

Now that view is being challenged by a team of biologists at the landlocked University of Utah. David Carrier, the group's leader, usually studies locomotion among land animals and doesn't claim to know much about marine mammals. "I've never even seen a sperm whale," he admits. But after reading Nathaniel Philbrick's 2000 book about the *Essex* tragedy, *In the Heart of the Sea*, Carrier wondered why evolution had apparently endowed sperm whales with the heady wherewithal to sink a ship.

Carrier and coworkers speculate that male sperm whales use their heads to batter rivals while competing for females—behavior, they point out, common to humpback whales and bottlenose whales. Sperm whale bulls are loners that rove equatorial waters in winter searching for a pod of females with which to mate. To succeed, they must fend off other males, for which, say the Utah researchers, their anatomy seems ideally suited. The male's huge forehead is rugged, padded with tough skin and blubber, and the brain is located many feet back, as if for safekeeping. Six fused-together vertebrae, Carrier says, act as additional shock absorbers.

He acknowledges that the evidence for butthead sperm whales is less than perfect. He did not examine live specimens, and only a few observers—sailors—have claimed to see the great creatures dueling. Instead, his theory is based on comparisons with other cetacean species whose males battle for multiple mates; on mathematical models of sperm-whale collisions; and on evidence such as the extensive scarring found on sperm whale bull foreheads.

But some whale experts view Carrier's theory, presented in the June issue of *The Journal of Experimental Biology*, as so much blubber. To be sure, researchers don't know the exact function of the sperm whale's outsize head. Some emphasize its role in echolocation, a sonarlike navigation system. Some suggest it functions as an amplifier that magnifies sounds—the loudest recorded from any animal—to stun giant squid and other prey or communicate with other sperm whales.

Some experts say Carrier made mistakes typical of a landlubber, confusing the animal's melon, an oil-filled section of the head found in other toothed whales, with its spermaceti organ, unique to sperm whales. Bertel Moehl, a cetacean expert at Denmark's University of Aarhus, laments that Carrier has advanced such a different view of sperm whale behavior with what he says is scant evidence. Hal Whitehead, a sperm whale expert at Dalhousie University in Halifax, Nova Scotia, dismisses the new idea, saying that if the male sperm whale's disproportionate head evolved to attack other males, then "natural selection was very remiss in giving the females one too." Ted Cranford, a San Diego-based whale expert, criticized Carrier for not directly studying sperm whales and ignoring previously published data that don't fit his theory.

But other cetacean experts, like the Smithsonian Institution's James Mead, say Carrier's theory is intriguing and worthy of further study. Carrier, for his part, says that he and his team have merely revived an old theory that scientists abandoned long ago. If the Utah researchers are right that sperm whales are built for aggression as Melville fantasized, the sea will lose a gentle giant. But it would prove that science, like life, can imitate art.

Kevin Roderick, a Los Angeles-based writer, is the author of The San Fernando Valley: America's Suburb.

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FLOATING WARRIORS: Indian security forces patrol Kashmir's Dal Lake, near the city of Srinagar, in gondola-like *shikaras* once used to carry tourists visiting the disputed region's summer capital. India and Pakistan have gone to war three times over Kashmir since 1947. Photographer Ami Vitale (represented here by Getty Images) is based in India.

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"As long as there are stories to share, I'll take care of my diabetes."

"It's our special time—reading together on the porch. Bobby never gets tired of hearing his favorites. I never get tired of seeing him smile. I'm not going to let type 2 diabetes keep me from sharing many more stories with my grandson.

"I've switched to a healthier diet. Even my wife's on it. For exercise, I walk a mile a day but I still needed some help. So my doctor added *Avandia* for my type 2 diabetes. It makes my body more responsive to its own natural insulin, so I can control my blood sugar more effectively.

"My blood sugar levels have improved with *Avandia*. And while not everyone has the same results, I've kept my blood sugar down for over a year. Now that's a great story."

Avandia, along with diet and exercise, helps improve blood sugar control. It may be prescribed alone, with Glucophage® (metformin HCl tablets) or with sulfonylureas. When taking *Avandia* with a sulfonylurea, you may be at risk for low blood sugar. Ask your doctor whether you need to lower your sulfonylurea dosage.

Some people may experience tiredness, weight gain or swelling with *Avandia*.

Avandia in combination with insulin may increase the risk of serious heart problems. Because of this, talk to your doctor before using *Avandia* and insulin together. *Avandia* may cause fluid retention, or swelling, which could lead to or worsen heart failure, so tell your doctor if you have a history of these conditions. If you experience an unusually rapid increase in weight, swelling or shortness of breath while taking *Avandia*, talk to your doctor immediately. *Avandia* is not for everyone. If you have severe heart failure or active liver disease, *Avandia* is not recommended.

Also, blood tests to check for serious liver problems should be conducted before and during *Avandia* therapy. Tell your doctor if you have liver disease, or if you experience unexplained tiredness, stomach problems, dark urine or yellowing of the skin while taking *Avandia*.

If you are nursing, pregnant or thinking about becoming pregnant, or if you are a premenopausal woman who is not ovulating, talk to your doctor before taking *Avandia*.

See important patient information on the adjacent page.

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than diabetes.®

Patient Information about AVANDIA® (rosiglitazone maleate) 2 mg, 4 mg, and 8 mg Tablets

What is *Avandia*?
Avandia is one product in a class of prescription drugs called thiazolidinediones (thigh-a-zol-a-deen-die-owns) or TZDs. It is used to treat type 2 diabetes by helping the body use the insulin that it is already making. *Avandia* comes as pills that can be taken either once a day or twice a day to help improve blood sugar levels.

How does *Avandia* treat type 2 diabetes?
If you have type 2 diabetes, your body probably still produces insulin but it is not able to use the insulin efficiently. Insulin is needed to allow sugar to be carried from the bloodstream into many cells of the body for energy. If insulin is not being used correctly, sugar does not enter the cells very well and builds up in the blood. If not controlled, the high blood sugar level can lead to serious medical problems, including kidney damage, blindness and amputation.

Avandia helps your body use insulin by making the cells more sensitive to insulin so that the sugar can enter the cell.

How quickly will *Avandia* begin to work?
Avandia begins to reduce blood sugar levels within 2 weeks. However, since *Avandia* works to address an important underlying cause of type 2 diabetes, insulin resistance, it may take 8 to 12 weeks to see the full effect. If you do not respond adequately to your starting dose of *Avandia*, your physician may increase your daily dose to improve your blood sugar control.

How should I take *Avandia*?
Your doctor may tell you to take *Avandia* once a day or twice a day (in the morning and evening). It can be taken with or without meals. Food does not affect how *Avandia* works. To help you remember to take *Avandia*, you may want to take it at the same time every day.

What if I miss a dose?
If your doctor has prescribed *Avandia* for use once a day:

- As soon as you remember your missed dose, take one tablet anytime during the day.
- If you forget and go a whole day without taking a dose, don't try to make it up by adding another dose on the following day. Forget about the missed dose and simply follow your normal schedule.

If your doctor has prescribed *Avandia* for use twice a day:

- As soon as you remember the missed dose, take one tablet.
- Take the next dose at the normal time on the same day.
- Don't try to make up a missed dose from the day before.
- You should never take three doses on any single day in order to make up for a missed dose the day before.

Do I need to test my blood for sugar while using *Avandia*?
Yes, you should follow your doctor's instructions about your at-home testing schedule.

Does *Avandia* cure type 2 diabetes?
Currently there is no cure for diabetes. The only way to avoid the effects of the disease is to maintain good blood sugar control by following your doctor's advice for diet, exercise, weight control, and medication. *Avandia*, alone or in combination with other antidiabetic drugs (i.e., sulfonylureas or metformin), may improve these other efforts by helping your body make better use of the insulin it already produces.

Can I take *Avandia* with other medications?
Avandia has been taken safely by people using other medications, including other antidiabetic medications, birth control pills, warfarin (a blood thinner), Zantac® (ranitidine, an antiulcer product from GlaxoSmithKline), certain heart medications, and some cholesterol-lowering products. You should discuss with your doctor the most appropriate plan for you. If you are taking prescription or over-the-counter products for your diabetes or for conditions other than diabetes, be sure to tell your doctor. Sometimes a patient who is taking two antidiabetic medications each day can become irritable, lightheaded or excessively tired. Tell your doctor if this occurs; your blood sugar levels may be dropping too low, and the dose of your medication may need to be reduced.

What should I discuss with my doctor before taking *Avandia*?
Avandia in combination with insulin may increase the risk of serious heart problems. Because of this, talk to your doctor before using *Avandia* and insulin together. *Avandia* may cause fluid retention or swelling which could lead to or worsen heart failure, so tell your doctor if you have a history of these conditions. You should also talk to your doctor if you have liver problems, or if you are nursing, pregnant or thinking of becoming pregnant. If you are a premenopausal woman who is not ovulating, you should know that *Avandia* therapy may result in the resumption of ovulation, which may increase your chances of becoming pregnant. Therefore, you may need to consider birth control options.

What are the possible side effects of *Avandia*?
Avandia was generally well tolerated in clinical trials. The most common side effects reported by people taking *Avandia* were upper respiratory infection (cold-like symptoms) and headache. As with most other diabetes medications, you may experience an increase in weight. You may also experience edema (swelling) and/or anemia (tiredness). If you experience any swelling of your extremities (e.g., legs, ankles) or tiredness, notify your doctor. Talk to your doctor immediately if you experience edema, shortness of breath, an unusually rapid increase in weight, or other symptoms of heart failure.

Who should not use *Avandia*?
You should not take *Avandia* if you are in the later stages of heart failure or if you have active liver disease. The following people should also not take *Avandia*: People with type 1 diabetes, people who experienced yellowing of the skin with Rezulin® (troglitazone, Parke-Davis), people who are allergic to *Avandia* or any of its components and people with diabetic ketoacidosis.

Why are laboratory tests recommended?
Your doctor may conduct blood tests to measure your blood sugar control. Blood tests to check for serious liver problems should be conducted before starting *Avandia*, every 2 months during the first year, and periodically thereafter.

It is important that you call your doctor immediately if you experience unexplained symptoms of nausea, vomiting, stomach pain, tiredness, anorexia, dark urine, or yellowing of the skin.

How should I store *Avandia*?
Avandia should be stored at room temperature in a child-proof container out of the reach of children. Store *Avandia* in its original container.

GlaxoSmithKline

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Epic Images

Here are some names to roll over your tongue: Tamerlane, Genghis Khan, the Peacock Throne, the Taj Mahal. For those of us in the West, they possess an almost mystical allure, but each represents a real person, place or object. And let us not forget Akbar, ruler of the Mughal Empire in north India from 1556 to 1605. Mughal—another exotic name—made its way into English as mogul, meaning rich and powerful.

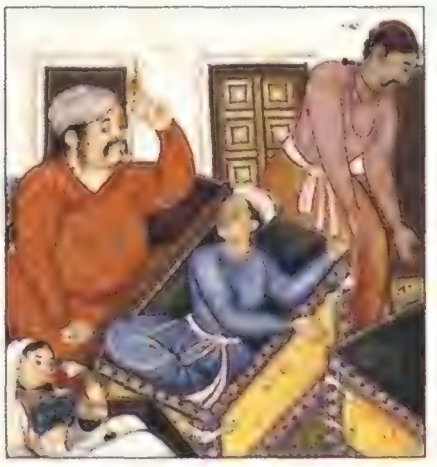
For good reason. Akbar's ancestors were, indeed, the nomadic conquerors Tamerlane and Genghis Khan, and his own grandson sat on the jewel-encrusted Peacock Throne and built the Taj. Akbar himself, a visionary, open-minded ruler who came to power at age 13 and expanded his empire tenfold, gave us the Hamzanama (Story of Hamza), which is to Mughal fine art what the Taj is to architecture—one of the great gifts to the world. Originally consisting of 1,400 paintings, each two feet high, the images chronicle the exploits of the nephew of the prophet Muhammad. Following in

PRIVATE COLLECTION

Valiant Hamza (clad in orange tunic, center), the mythical hero of the richly illustrated 16th-century story cycle that is a masterpiece of Mughal literature and art, subdues a fearsome sea monster.

his uncle's footsteps, Hamza set off on his own quest to spread the teachings of Islam. Now, in the first major exhibition in the United States, 61 of the 200 surviving Hamzanama paintings are on view at the Smithsonian's Arthur M. Sackler Gallery through September 29. (The show will be at the Brooklyn Museum of Art from November 1 through January 26, 2003, and travels on to London and Zurich.)

"The closest equivalent to Hamza that I can think of is Indiana Jones," says John Seyller, curator of the show, "because, like Indiana Jones, Hamza has adventures that are so fantastic you forget what he's actually going after." Back in court after a day of elephant hunting or relaxing in his harem, Akbar would ask for a recitation of the Hamzanama or even relate some portion of the story himself, while courtiers held up the pertinent paintings. Almost the size of posters, these images constituted a kind of private video collection for the emperor.



An enemy of Hamza flees by stowing himself inside a trunk.

He could choose from subplots emphasizing heroism, intrigue or comedy. On board ship in a roiling sea, Hamza shoots an arrow into a fanged sea monster's eye. Or, inside an exquisitely patterned pavilion, Hamza's foes, wanting to escape his sympathizers, hide themselves inside trunks (detail, left).

Beyond the imaginative derring-do and humor of the stories, the style of the Hamzanama is bold and even jarring. In the scene shown on the previous page, for example, the artist curved the boat's hull into a decidedly unlikely shape to make room for the monster's rearing head. This approach would influence all subsequent Mughal painting.

Although Akbar's workshop was led by Persian artists, it included many Indians, so the sophisticated, decorative patterns and static human figures of the Persian tradition blended in surprising, and sometimes delightfully quirky, ways with the more sensual traditions of Indian art. And though it may sound clichéd to say so, the colors are truly jewellike.

The Mughals themselves, in fact, valued the Hamzanama even more than jewels. When their once-powerful court in Delhi was sacked in 1739, the invader carried off—among other loot—the Peacock Throne and the Hamzanama. What the Mughal emperor pleaded for the thieves to send back wasn't the Peacock Throne. The exhibition "The Adventures of Hamza" demonstrates why.

—Constance Bond

Inside the Domain of Dinosaurs

To find oneself portrayed as a grinning scalawag and a denizen of sleazy, pirate-ridden pubs is, perhaps, a dubious fringe benefit of life as a vertebrate paleontologist. But for scientist Michael Brett-Surman, making a cameo appearance as a buccaneer in an illustration for author-artist James Gurney's wildly popular fantasy series, *Dinotopia*, constitutes a professional perk. The books are set on a fictive island where humans and a full complement of saurian companions coexist.

The collaboration between Gurney and Brett-Surman marked a more dignified milestone this past spring when the two men convened at the National Museum of Natural History (where Brett-Surman is a staff scientist) for the opening of "*Dinotopia*," an exhibition he co-organized. The show, coinciding with the tenth anniversary of the publication of Gurney's first volume, *Dinotopia: A Land Apart from Time*, features 30 oil paintings from that book and its sequel. Architectural models the artist constructed in preparing his illustrations, and unpublished paintings, watercolors and preliminary studies, are also on view through September 2.

From the *Dinotopia* series: Explorers, astride domesticated dinos, encounter hostile tyrannosaurs.

The story of how the soft-spoken scientist found

TOP: (DETAIL) AUSTRIAN MUSEUM OF APPLIED ARTS/CONTEMPORARY ART, VIENNA; JAMES GURNEY/NATIONAL MUSEUM OF NATURAL HISTORY, SI

ADDRESS: NOWHERE.
SKILLS: NONE.

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Continued from page 40

himself cast as a pub-crawling supernumerary begins—where else?—in a bar. In 1989, the two men were attending the World Science Fiction Convention in Boston. As Brett-Surman waited for some colleagues to surface at a Back Bay watering hole, he happened to overhear Gurney talking about dinosaurs. "And getting about half of it wrong," Brett-Surman recalls with a smile.

Gurney, already well established as an illustrator and painter specializing in science fiction and fantasy, was pitching an idea to his publisher for a book about a utopian, dinosaur-populated island. Brett-Surman promptly identified himself as a dinosaur expert and offered his services. It was a perfect match. After all, says the scientist, "paleobiologists treat the extinct as if they are still alive." Over the decade, Brett-Surman has relished bouncing around ideas and strengthening the "science" in Gurney's science fiction.

But what of the anachronistic premise underlying the *Dinotopia* books, that of peaceful coexistence between dinosaurs and humans? That construct, however absurd (dinosaurs and Homo sapiens having missed each other by a mere 60 million years or so), has never been a sticking point for Brett-Surman. "I knew it was a story," he says, "not a NOVA special."

—Victoria Dawson

Wrapped in Tradition

Back when Michael Jordan was leading Chicago to successive NBA titles, two boys in the searing heat of southern Madagascar sported matching Bulls jackets—black and red with a longhorn on the back—though they had never seen a basketball game. "They liked the jacket because of the bulls," says anthropologist Sarah Fee.

Fee is guest curator of "Gifts and Blessings: the Textile Arts of Madagascar," a new exhibition on view at the National Museum of African Art through September 2. "The way a person dresses and the type of fabrics used for clothing hold special significance for the people of Madagascar," she says. "The boys viewed the Bulls symbol in the context of their culture. Their people, the cattle-herding Tandroy, sacrifice bulls to gain the blessings of the ancestors."

In Madagascar, cloth denotes social status, identity, wealth and ethnicity. Gifts of cloth also play a central role in wedding and funerary rites and in diplomacy. In fact, the exhibition centerpieces are two intricately woven silk textiles sent by Queen Ranavalona III to U.S. President Grover Cleveland in 1886 to win U.S. support for the country's struggle against French colonialism.

Cloth's symbolic importance persists in local traditions and beliefs, especially in rural areas, even though many Malagasy (as the people of Madagascar are known) now dress in factory-made, Western-style clothing. The last decade has seen a resurgence of interest in traditional textiles in the country's thriving fashion industry. These fabrics now dominate the runways of Madagascar's annual high-fashion show, and local designers are supplying them to such renowned houses as Yves Saint Laurent and Christian Dior.

The island, off the east coast of Africa, was populated about 2,000 years ago by sailors from the Near East, Asia and East Africa. Later, Arab merchants added their influences. Today, Antananarivo, the nation's capital, boasts new boutiques alongside rustic shops, and its crowded roads are lined with men and women wrapped shoulder to toe in cloth shawls called *lambas*. Most lambas are now cut from

GOVERNMENT OF THE REPUBLIC OF MADAGASCAR

Malagasy diplomats (in a detail of a 19th-century painting) visited Britain's Queen Adelaide in 1837.

In 1886, Queen Ranavalona III (right) sent U.S. President Grover Cleveland the prized silk *lamba* above. He missed the point.

factory-made fabrics, but until about 50 years ago, boldly striped, vividly colored cloths were hand-woven by the island's women from indigenous fibers—cotton, raffia palm, banana stem, hemp, reeds and spun tree bark.

"Cloth is something miraculous for the Malagasy," says Fee. "It's a cultural artifact that establishes bonds between men and women, sovereigns and subjects, the living and the dead, locals and strangers." A local adage asserts that "it is cloth that makes people." Traditionally, a person not clothed in a lamba is an unknowing, unsocial being. "The lamba signifies love and commitment," says National Museum of African Art curator Christine Mullen Kreamer. "As a gift to foreign leaders, it demonstrates friendship and honor. Wrapped around the body of the deceased, or brought as a gift to drape over a coffin, it symbolizes respect and connection to ancestors."

Even the way a lamba is worn has significance. Pulled over the head, it can express shyness or modesty. Secured tightly around the body, it denotes action and determination. Girls from the highland Merina region signal their intentions to suitors by wearing their lambas on the left or right shoulder. "In the first case," says Fee, "it depicts interest, in the second, rejection." When a Tandroy man wishes to marry, he offers his intended a lamba. Her acceptance of it seals an agreement of rights and obligations.

During the first half of the 19th century, Britain and France vied for control of Madagascar. In 1868, after signing a treaty of commerce and friendship with the United States, Queen Rasoherina sent President Andrew Johnson costly silks in an effort to establish symbolic ties of kinship and thus gain support for Malagasy independence. Unaware, it seems, of the meaning of the gesture, Johnson responded with gifts that reflected America's industrial might—a Singer sewing machine for the queen and a pair of Smith and Wesson pistols for the prime minister.

By the early 1880s, American ships were engaged in the lucrative sale of cloth, oil and guns to the island. Hoping to gain U.S. backing against imminent French conquest, the newly enthroned, 19-year-old Queen Ranavalona III sent a symbolic gift of two elaborate silk lambas to President Grover Cleveland. "But it didn't work," says Fee. "Cleveland didn't fully comprehend the implications of the gift, and reciprocated by sending the queen signed photographs of himself and his wife." U.S. policy remained neutral. (Upon leaving office, Cleveland gave the lambas to the Smithsonian, where they were listed first as "table-covers" and later as "silk shawls.")

In today's Madagascar, hand-weaving remains a dynamic art form. Some weavers have remained faithful to traditional decorative styles. Others have adapted to foreign influences, creating such contemporary items as neckties and shoulder wraps in trendy new colors. The newest style of shoulder cloth was inspired by an outfit worn by the star of a Mexican soap opera popular in Madagascar called *MariMar*.

In the villages, lambas are still put to traditional uses as hip wraps or head covers. But for most rural Malagasy, the lamba's chief function is in showing reverence to ancestors, who, according to local belief, bestow prosperity and health on their descendants. In a *famadihana*, a Merina funerary ritual attended by hundreds of family members, ancestral remains are removed from their tombs and wrapped in new lambas.

For the Tandroy, a funeral is also a time to honor the ancestors. Which is just what the two Tandroy boys in Chicago Bulls jackets were doing. "Dressed in what they considered their finest clothes," says Fee, "they were about to help carry the coffin of a relative to its final resting place."

Visit the Smithsonian

For a free Associates' planning packet, call Smithsonian Information, 202-357-2700 or 202-357-1729 (TTY), 9 A.M.-5 P.M., Monday through Saturday, or send an e-mail to info@si.edu.

INFORMATION CENTER

Upon arrival, stop at the Smithsonian Information Center in the Castle (9 A.M.-5:30 P.M.). Most museums are open daily, 10 A.M.-5:30 P.M., except December 25. Members are invited to drop by the reception desk (9 A.M.-4 P.M.) to register for a behind-the-scenes tour and to hear about membership benefits.

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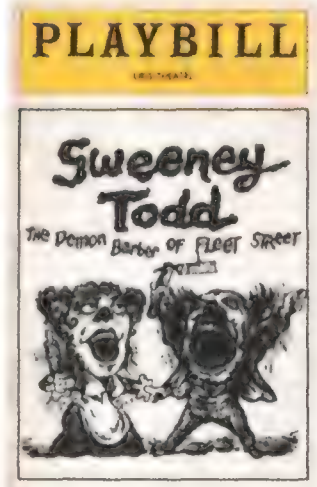
A SUMMER FESTIVAL SHOWCASES THE WIT AND ARTISTRY OF THE MUSICAL-THEATER MASTER, DRAWING "NUTS" FROM ALL OVER

Sondheim!



BY CHIP BROWN

MOST EVERY STEPHEN SONDHEIM NUT HAS had a kind of near-mystical conversion experience. Mine happened in New York City in a balcony seat at the Booth Theatre in the fall of 1984. The show was *Sunday in the Park with George*, Sondheim's musical drama about Georges Seurat, the making of his pointillist masterpiece and the emotional price artists pay "to get through to something new." I tried for years to figure out what conjunction of life and art left me sobbing in my not-so-cheap seat and then drew me back a few weeks later to shed yet another liter of tears.

The virtues of the show were patent. *Sunday* was brilliantly acted, beautifully lit, powerfully staged. Its songs were rich and sharp and wise, attuned to the heartache and evanescence of life: "Pretty isn't beautiful, Mother, / Pretty is what changes / What the eye arranges / Is what is beautiful." And the score! A person would have to be deaf not to be swept up in its harmonies, its soaring arpeggios and dreamy, pulsing undercurrents.

Still, my emotional havoc seemed beyond reason. I suppose I was primed for a catharsis, being stuck in an uninspiring job in Washington, D.C. and, like the modern-day George in *Sunday*'s second act, casting about for new directions. When George and his mistress, Dot, sang the ravishing duet "Move On," I could hear the very verses of my own doomed love affair: "I chose, and my world was shaken / So what? / The choice may have been mistaken, / The choosing was not." The theater let out, and I staggered into a record store searching for the cast album with the fervor that a teenager today might feel pursuing a Britney Spears single.

Years later, I now see that those rapt hours in the balcony marked a kind of awakening, the end of a protracted adolescence and the beginning of adulthood with its cultivated ironies, bittersweet pleasures and continually more complex forms of folly. To encounter Sondheim's songs of experience for the first time—to discover the nuances of a mind that could rhyme "Schweitzer" with a slurred "lights're" in the couplet "Who needs Albert Schweitzer / When the lights're low?"—was to stand as a hayseed on the threshold of urbanity itself. I was mad to immerse myself in the Sondheim canon: mad to move on. I owe part of my decision to leave Washington for the lyric Oz of Manhattan to the romantic impetus of a Sondheim song from *Company*, "Another Hundred People":

> Another hundred people just got off of the train
> And came up through the ground

Out of some 500 songs by Sondheim (left), perhaps the best known is "Send in the Clowns," which he dashed off one night for *A Little Night Music*. But his personal favorite is from *Pacific Overtures*: "Someone in a Tree."

PHOTOFEST (3); P. 44 ANNIE LEIBOVITZ/CONTACT PRESS IMAGES

While another hundred people just got off of the bus
And are looking around
At another hundred people who got off of the plane
And are looking at us
Who got off of the train
And the plane and the bus . . .

And so my conversion was complete, accomplished in accord with that hoary truism of spiritual growth: when the nut is ready, the teacher appears.

STEPHEN SONDHEIM HAS HAD A CULT FOLLOWING PRACTICALLY from the time he was a schoolboy pianist on Manhattan's Central Park West, scampering through the "Flight of the Bumblebee" with his speedy right hand. Over the past half century, a period in which the now 72-year-old composer has written music and words for some 500 songs and more than a dozen major musicals on such far-flung subjects as the Westernization of Japan and the psychopathology of revenge in a 19th-century London barbershop, Sondheim has been embraced by a small army of fanatics. Music professors, therapists and aspiring composers pore over his work. There's hardly an internal rhyme or hemidemisemiquaver that hasn't been parsed in the quarterly journal, *The Sondheim Review*. Web sites like sondheim.com are filled with the impassioned chat of devotees discussing the life and work of the man they call "the master." As *New York* magazine once asked, "Is Stephen Sondheim God?"

With seven Tony Awards, an Oscar for a musical score (*Dick Tracy*) and a Pulitzer Prize (*Sunday*), "the master" has won about every award a musical dramatist can win. Most critics, even the sourpusses who accuse him of putting the head before the heart, and carp that he doesn't write melodies—that his shows, in the words of John Lahr in the *New Yorker*, "substitute the prestige of pain for the prestige of enjoyment"—would nonetheless not quarrel with the cultural critic Thomas Adler, who nearly 25 years ago called Sondheim the "single most important force in the American musical theater."

And yet Sondheim has never quite escaped the ghetto of cult enthusiasm. Sondheim has always been an acquired taste. He's never achieved the sort of popularity of Andrew Lloyd Webber or had a megahit on the order of a *Cats*. Probably his best-known song is "Send in the Clowns," which he knocked out in a single bleary-eyed session for *A Little Night Music*, but his tunes don't often appear on the hit parade.

While popularity is hardly a measure of artistic merit, it evidently matters to Sondheim, who has written a lyric comparing the sought-after "sound of an audience losing its mind" to "the Pope on his balcony blessing mankind." And Broadway babies still hope, against increasing odds, that

After Herbert Sondheim (top, with Stephen, 10) left the boy's mother, Janet (middle right), she shaped his future by befriending lyricist Oscar Hammerstein (above, second from right, with Jamie and Dorothy Hammerstein, Mimi Lynch and Sondheim). Stephen (middle left) composed his first musical in prep school.

"Nobody could imagine the journey he's taken us on," Barbara Cook says. "He won't play it safe."

commercial Broadway theater can once again support something besides witless pop operas and corporate cookie-cutter confections. Sondheim has said that he was resigned to never being widely popular. Lately, however, there are signs that public taste is morphing in his direction.

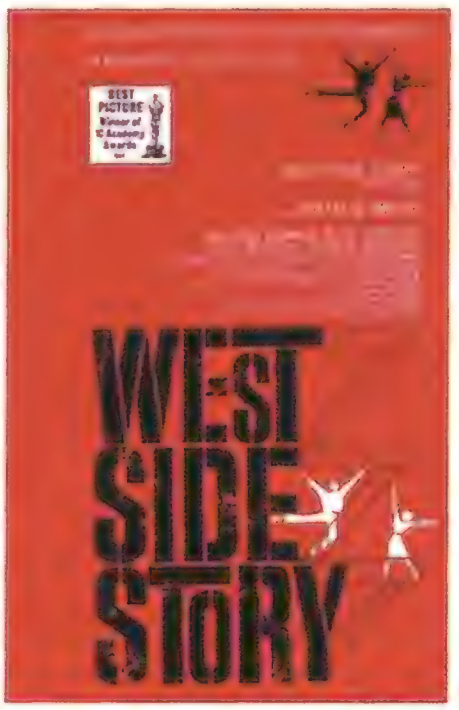
When the Kennedy Center in Washington, D.C. opened its box office this past February for its summerlong "Sondheim Celebration," ticket buyers jammed 40 phone lines, clicked on the Web site 55 times a second and stood in long lines outside. Ticket sales shattered the one-day record, previously held by *Beauty and the Beast*. OK, 10 percent of the buyers were from Sondheim cult headquarters—New York City. But tickets also went to people around the country and as far away as Sweden and Japan.

The festival, which concludes in late August, features new productions of *Sweeney Todd*, *Sunday*, *A Little Night Music*, *Company*, *Passion* and *Merrily We Roll Along* (an undeservedly neglected piece, which closed after only 16 performances when it debuted on Broadway in 1981). The bill also includes cabaret concerts by major Sondheim interpreters Mandy Patinkin and Barbara Cook.

Cook, 74, performs in *Mostly Sondheim*, a program that highlights songs such as "In Buddy's Eyes" (*Follies*) and "So Many People" (written in his early 20s) and also features songs that Sondheim says he wishes he'd written, including those by Irving Berlin and Harold Arlen that Sondheim selected for a concert at the Library of Congress in honor of his 70th birthday.

At the performance I attended, Cook recalled that a journalist asked her to describe Sondheim in one sentence. "All of a sudden the name Picasso popped into my head," she said, adding of Sondheim: "Nobody could imagine the journey he's taken us on—he won't play it safe." Also like Picasso, Sondheim makes demands on the audience. "You have to hear some of Sondheim's songs several times before you understand what he's getting at," Cook said.

The Kennedy Center's $10 million Sondheim festival originated with its president, Michael M. Kaiser, whose favorite Sondheim musical, like mine, is *Sunday*. The artistic director is 40-year-old Eric Schaeffer, who has staged numerous Sondheim revivals at the Signature Theatre in Arlington, Virginia. Schaeffer's conversion dates to when he was a high school drama student in Fleetwood, Pennsylvania (a town best known for producing Cadillac bod-



At 27, Sondheim wrote lyrics for Leonard Bernstein's music.

ies), and saw *Sweeney Todd* on Broadway. "I was blown away," he recalls. "The characters just came out at you—you felt like you were living the terror they were living. I had never felt that before. . . . Steve goes to levels and depths that are unique."

In April, the Kennedy Center staged a sold-out conversation between Sondheim and former *New York Times* drama critic Frank Rich. The composer touched on subjects from writing lyrics for Ethel Merman in *Gypsy*, to his artistic influences, to the movie he would most like to turn into a musical (*Groundhog Day*). The most provocative question, given Sondheim's stated belief that Broadway composers rarely create valuable work after age 50, came from an audience member: "What do you still wish to accomplish?"

"Gee, I wish I had a dramatic answer," Sondheim replied. "The fact is, I really like writing shows. It gets harder as time goes on. I thought I'd get more confident. And you'd think something like this Washington celebration would make me more confident, and it doesn't. I think the more you write, the more you realize how much you don't know. I think you get a view of yourself and somehow the weaknesses, the dangers of things like repetition, the feeling that you've written it all before, makes it harder to write. But in a way that also makes me want to write more because I want to overcome it. And, to put it sentimentally, there are just so many wonderful stories to tell, and I would really like to find some that would lend themselves to music that I haven't heard before. That's what I want. And that's what I'm afraid of: writing music I've heard before."

THE DAY BEFORE HE MADE HIS BROADWAY DEBUT, AS THE 27-year-old lyricist of *West Side Story*, he wrote an uncharacteristically forthcoming letter to the musical's composer, Leonard Bernstein: "You know—only too well—how hard it is for me to show gratitude and affection, much less commit them to writing," he said, adding that friendship "is a thing I give and receive rarely."

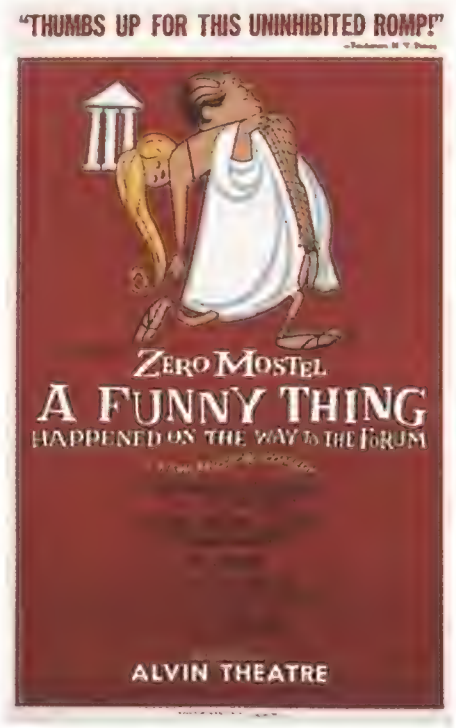
A photograph from that time shows Sondheim with a Blackwing pencil clamped in his mouth, a lock of dark hair drooping across his forehead and a touch of sadness in his eyes. He had grown up in a plush apartment building overlooking Central Park, the only child of Herbert and Janet Sondheim. His father, a self-taught pianist, played show tunes to relax. He was a benevolent if remote pres-

EVERETT COLLECTION; P. 46 WALTER SONDHEIM COLLECTION (2)
JOAN BARNETT COLLECTION; RODGERS & HAMMERSTEIN ORGANIZATION

Mother and son grew estranged. When she died, at 95, he did not attend her funeral.

ence, largely preoccupied with managing a successful dress manufacturing company. Sondheim's mother, who designed dresses for her husband's company and also worked as an interior decorator, has been variously described as a woman with gumption and a sharp sense of humor, and also as a social climber who fibbed about her background and feigned a tony accent, according to Meryle Secrest's 1998 biography, *Stephen Sondheim: A Life*. Sondheim's parents traveled often, leaving their child in the care of a nurse or nanny; he had "an institutional childhood," he once said. He started piano lessons at age 7 and showed a precocious interest in crossword puzzles and anagrams.

In 1940, when Sondheim was 10, his family imploded; his father walked out, and later moved in with another woman in New York. (Herbert Sondheim eventually remarried, had two more sons and died in 1966.) A jilted Janet Sondheim, according to biographer Secrest, did her best to poison her son's relationship with his father, forbidding the boy from visiting his father in the company of his wife-to-be—and possibly having him followed to make sure he obeyed. In a step that may have been rather cunning, she moved with her son around 1942 to a farm in Bucks County, Pennsylvania, where their neighbors included Oscar Hammerstein, Jr. With composer Jerome Kern, lyricist Hammerstein had written the songs for the watershed 1927 musical *Showboat*, and was about to form his partnership with composer Richard Rodgers and in 1943 advance the Broadway musical yet again, with *Oklahoma!*



The 1962 Broadway hit featured words *and* music by Sondheim.

Young Stephen Sondheim befriended Oscar's son, Jamie, and became a fixture at the Hammerstein house. In the famous lyricist he found not only a surrogate father but a vision of the future. For his part, Hammerstein had an immense trove of technical knowledge to share, and arranged a summer job for the teenage Sondheim as a gofer on the set of Rodgers and Hammerstein's *Allegro*.

Sondheim was at the George School outside Philadelphia when he composed his first musical, *By George*, and demonstrated a preternatural knack for the music of language, writing of the conservative prep school in one song: "No firearms, no drinking / Not even coed winking / All they allow is thinking."

He showed the script to his mentor and asked for an unflinching critique. When Sondheim's lower lip began to tremble, Hammerstein said that although *By George* was riddled with flaws, its author clearly had talent. Hammerstein devised a syllabus by which Sondheim would study musical theater composition. He was to write four shows, all based on other sources. Sondheim dutifully followed the program. He would continue to seek his mentor's advice until Hammerstein died in 1960.

No doubt the young Sondheim's difficulties with his mother made the Hammerstein household all the more of a refuge. His mother, Sondheim later told biographer Secrest, was "an impossible person" who, among other infractions, "used me the way she had used [my father], to come on to and to berate." Mother and son grew estranged. In the 1970s, Sondheim's mother was scheduled to have a pacemaker implanted in her chest. She apparently believed that the procedure entailed open-heart surgery, which she imagined would kill her, and wrote a valedictory note to her son, delivered by messenger. "The night before I undergo open heart surgery (my surgeon's term)," the note said, "the only regret I have in life is giving you birth."

Sondheim's reply, according to Secrest, was three pages of indictments he had kept dammed up all his life. He said he never wanted to see her again (though, later, he did see her). She died in 1992, at 95. He did not attend the funeral.

Inevitably, many have wondered how Sondheim's complex childhood may have shaped his temperament and work. Clearly his reserve, his irony and detachment, his wariness of emotional entanglements, his perfectionism and profound self-doubt, his precocity and even his romanticism can be read as compensations for and responses to the pain of a broken home. The same goes for his love of the stage and the surrogate family of theater folk, and his attachment to his teachers.

Though the parallels between his art and life invite speculation, Sondheim, who reportedly has spent many years in psychoanalysis, has warned interviewers not to interpret his characters as embodiments of his personal history—they're just vehicles for stories, he says. Generally, he does not even dream them up; they come from the playwrights and directors he works with. All he does, he says, is try to

Zan Charisse struts in a 1974 *Gypsy*. Lee Remick and Lauren Bacall fete Sondheim in 1977. He labors in 1957's *West Side Story* (with Arthur Laurents, Hal Prince, Robert Griffith, Leonard Bernstein and Jerome Robbins). Christine Baranski and Brian Stokes Mitchell cut up in 2002's *Sweeney Todd*. London loves Sondheim in 1976.

TRITON GALLERY; P. 49 MARTHA SWOPE/TIMEPIX; BETTMANN/CORBIS; ABELES-FRIEDMAN/NEW YORK PUBLIC LIBRARY; HULTON-DEUTSCH COLLECTION/CORBIS; JOAN MARCUS

inhabit the characters, just as an actor gets into a part. Even so, Sondheim has acknowledged that artists choose stories that resonate with them. The critic Allen W. Menton has noted that a recurring theme in Sondheim's work is the "domineering or repressive mother figure locked in a cycle of dependence and rivalry with (often grown) children." Ultimately, every choice an artist makes is autobiographical, and one can usually detect the composer in the composition.

In 1946, Sondheim entered Williams College interested in mathematics as well as music, but soon veered away from numbers under the spell of music professor Robert Barrow. After graduating, in 1950, he had a fellowship and studied in New York with the American avant-garde composer Milton Babbitt. He went to Hollywood and wrote scripts for the television show *Topper*, then returned to the East and worked on *Saturday Night*, a musical squarely in the Rodgers and Hammerstein vein about a bunch of Brooklyn go-getters looking for love and success. Just when the show was headed for Broadway, the producer died and the show sank under the weight of unpaid bills. But Sondheim's witty songs left a mark, and in 1955—with urging from Hammerstein and after a chance meeting with librettist Arthur Laurents—he landed the plum job cowriting, with Leonard Bernstein, the lyrics for *West Side Story*. (Bernstein later granted Sondheim full credit for the lyrics.)

In 1958, Sondheim wrote the lyrics for *Gypsy*—a musical about an impossible mother, burlesque star Gypsy Rose Lee's. Then, in 1962, his long-standing ambition to compose both music and lyrics for a Broadway show was fi-

One critic called *Sunday* (starring Mandy Patinkin as Georges Seurat in the original 1984 Broadway production), with music and lyrics by Sondheim, "boring," but another said it had "more daring and surprise than the American musical stage has seen in a long time."

nally realized in *A Funny Thing Happened on the Way to the Forum*, a farce set in ancient Rome that starred the inimitable Zero Mostel and ran for 964 performances.

For the most part, Sondheim has been ahead of Broadway audiences, drawn to complex, neurotic characters and to that fundamental human emotion, ambivalence, about which Americans traditionally go to musicals to forget. Sondheim, a collector of 19th-century puzzles, apparently loves the psychological chess of working out a story, of building a character bit by bit.

For a while after *A Funny Thing Happened*, success largely eluded him. His next show, *Anyone Can Whistle*, ran for only nine performances in 1964. Honoring a commitment he'd made to Oscar Hammerstein, Sondheim then collaborated with Richard Rodgers on the 1965 show *Do I Hear A Waltz?* It was not a happy experience—Rodgers, who could be prickly, once disparaged Sondheim in front of the cast—but the show played 220 performances.

It wasn't until Sondheim teamed with director and producer Hal Prince that he resumed his stride. One can only envy those who saw the run of Sondheim shows that began in 1970 with *Company* and climaxed with *Sweeney Todd* in 1979. The decade completed Sondheim's transformation from apprentice to prodigy to subversive master of the traditionalist idiom to mold-shattering innovator.

MARTHA SWOPE/TIMEPIX; PHOTOFEST

ONE OF THE REWARDING THINGS ABOUT BEING A Sondheim nut is the joy of rediscovery. Little brilliancies sometimes go by so fast or in such a multitude you miss them on the first pass. I've had the record of *Company* for years, but only when I saw the Kennedy Center production did I catch the "personable / coercin' a bull" rhyme from "You Could Drive a Person Crazy":

> When a person's personality is personable,
> He shouldn't oughta sit like lump.
> It's harder than a matador coercin' a bull
> To try to get you off of your rump. . . .

Or take the 1971 show, *Follies*, a monumental valentine to a bygone era of Broadway. For the London production, Sondheim wrote a song called "Ah, But Underneath," a sort of emotional striptease that contains a stanza culminating in a giddy trifecta of rhymes:

> In the depths of her interior
> Were fears she was inferior
> And something even eerier
> But no one dared to query'er superior exterior. . .

And then there's "A Little Priest," the boggling waltz from *Sweeney Todd*. If not the wittiest duet ever written (I'd love to hear one better), it's inarguably the wittiest ever written about cannibalism. Its lip-smacking rhymes flesh out the culinary delights of dishes that one might prepare out of London's heterogeneous population, including "shepherd's pie peppered with actual shepherd on top" and "politician so oily it's served on a doily."

Sondheim devotees will be forever grateful to Library of Congress music specialist Mark Horowitz for the interviews he conducted with Sondheim in 1997, the most extensive about how the composer works and the basis of an upcoming book, *Sondheim on Music: Minor Details and Major Decisions*. The interviews help one appreciate the musicality of Sondheim's language and the speechlike articulation of his musical notes, not to mention his pursuit of perfection. In the score of *Sunday*, for instance, Sondheim indicates when George should jab his paintbrush at the canvas, synching the visual act of painting with accents in the music. In *Sweeney Todd*, he invented some bawdy Cockney slang to go with the real stuff that he found in a book.

Horowitz asked Sondheim about the genesis of the song that Sondheim has called his favorite, an Act I number from *Pacific Overtures* called "Someone in a Tree," which describes a treaty signing surreptitiously witnessed by a boy in a tree and overheard by a warrior hidden under the floor of the treaty house. (The Kennedy Center is scheduled to stage a Japanese production of *Pacific Overtures* in September.) But the song is really about how the mosaic of history is pieced together from fragments of memory. It has a propulsive flow, beginning as a quiet trickle and building like a river until it finally crests in some of Sondheim's most profound lyrics:

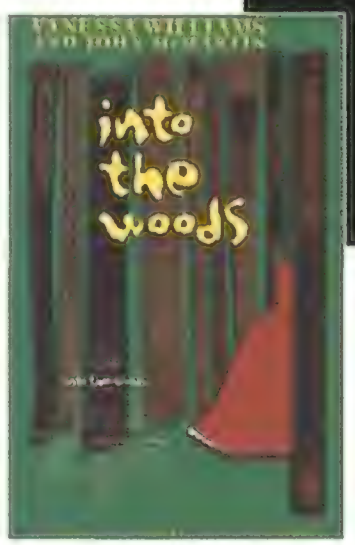
> It's the fragment, not the day.
> It's the pebble, not the stream.
> It's the ripple, not the sea
> That is happening.
> Not the building but the beam,
> Not the garden but the stone,
> Only cups of tea
> And history
> And someone in a tree.

Horowitz pointed out that "very little happens harmonically" in the song.

"Until the so-called chorus," Sondheim said.

"So how do you sustain interest in the listener with that kind of relentless music?"

Sondheim replied with a story about a visit to New York City's Metropolitan Museum of Art, where he realized that Japanese art was the ultimate expression of the less-is-more aesthetic. He saw a three-paneled Japanese screen. "The first panel was absolutely blank," he recalled. "The second panel was absolutely blank except for the end of a bird's tail; and the third panel had the rest of the bird and a tree. . . . Click! I thought: Ohhhhhhh, it's all about less is more."



Sondheim songs buoy dramatist James Lapine's take on the dark side of fairy tales, on Broadway again after 15 years (now starring Vanessa Williams, above).

For "Someone in a Tree," he said, he used one chord and made "tiny little variations on it" for 60 bars, gradually building on it so the "audience never gets bored." Then, he went on, "when you finally settle down to the chorus, and it finally hits the tonic chord, there's that sense of, pheeeww! I think it's terrific. So that's what that is: It's an attempt musically to echo the visual—and the literal—of Japanese art."

Clearly dazzled, Horowitz brought up "Green Finch and Linnet Bird" from *Sweeny Todd*. Sondheim, who has a residence on the east side of Manhattan, said he'd researched the birdcalls in the score by listening to birds in the woods near his home in Connecticut. But would Sondheim's Connecticut wrens have been heard in Britain?

"Oh, Mark, no! There's a *limit* to research."

I WENT TO THE KENNEDY CENTER'S PRODUCTION OF *Sunday in the Park with George* with some trepidation because, well, enchantment can't be bottled, and 18 years had gone by since my conversion; few things are more embarrassing than the object of a passion after it has cooled. Would it be like rediscovering some ghastly old love letter or overheated journal entry, where you cringingly wonder what the fuss was all about?

And then the curtain went up on a striking stage set with covered easels, and from the orchestra pit a French horn cried out, and strings came flowing up like a flood of water from a spring, and the driving percussive motifs of the piano pressed their argument forward. Sure, it was easy to mark what wasn't as good as the original (or the original as I remembered it), but memory slips too easily into myth, and after a while I found I wasn't holding back with crossed arms and a show-me face. I wasn't wanting the experience of the present to be as good as the memory of the past. I was hearing the music anew—seeing the drama of it in concert with the story on the stage. And suddenly the music was much richer for the drama that the singing actors were caught in. Which, after all, was the point. The finest rediscovery was a duet between the artist protagonist and his mother—"Beautiful," which says "what the eye arranges is what is beautiful." Until then, George's mother has been awful toward her son, calling him "deluded" and pretending he doesn't exist. And then suddenly they are together, George singing "All things are beautiful, Mother," and the fading old lady imploring her "Georgie" to capture their lives in paint before everything vanishes. Their voices rise climactically on the word "Sunday," and she sings, "disappearing as we look."

After Leonard Bernstein saw *Sunday*, in 1983, he wrote Sondheim a note saying the show was "brilliant, deeply conceived, canny, magisterial, and by far the most personal statement I've heard from you thus far. Bravo." There is a school of criticism that says it shouldn't matter whether a work of art is personal, only that it succeed as art. And when people are listening to *Sunday* a hundred years from now, maybe that's all that will matter. ("Let others make that decision," George's mistress says of his legacy.) But as I positioned myself to eavesdrop in the lobby at intermission, I couldn't help but be amazed that a song so suffused with maternal tenderness had come from a man whose own mother told him she regretted giving him his life.

In the lobby, a couple of middle-aged women in pantsuits were standing by a candy dispenser, stocking up on cough drops. One was frowning and looked unhappy. Her friend said, "I guess you're just not a Sondheim nut."

I suppressed an urge I've had before, to go forth and evangelize. The poor woman was suffering enough. Someday, maybe, the light will dawn.

Chip Brown's Good Morning, Midnight, *about a mountaintop suicide, will be published in 2003.*

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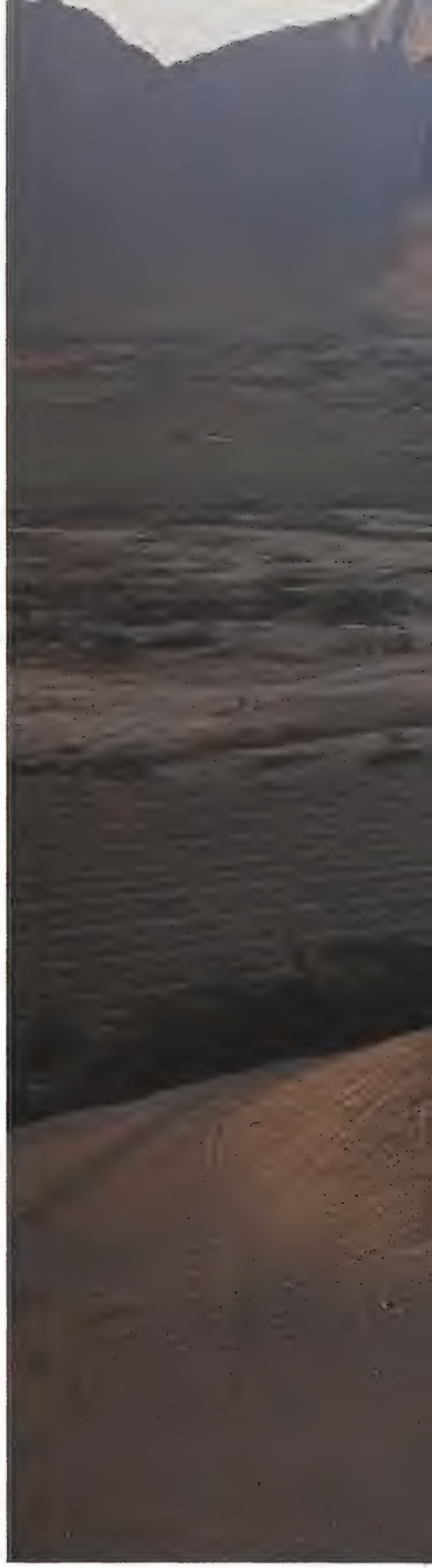
First City in the New World?

PERU'S CARAL SUGGESTS CIVILIZATION EMERGED IN THE AMERICAS 1,000 YEARS EARLIER THAN EXPERTS BELIEVED

PHOTOGRAPHS BY GEORGE STEINMETZ

The amphitheater served as the ceremonial heart of a thriving city 4,600 years ago.



SIX EARTH-AND-ROCK MOUNDS RISE out of the windswept desert of the Supe Valley near the coast of Peru. Dunelike and immense, they appear to be nature's handiwork, forlorn outposts in an arid region squeezed between the Pacific Ocean and the folds of the Andean Cordillera. But looks deceive. These are human-made pyramids, and compelling new evidence indicates they are the remains of a city that flourished nearly 5,000 years ago. If true, it would be the oldest urban center in the Americas and among the most ancient in all the world.

Research developed by Peruvian archaeologist Ruth Shady Solís of San Marcos University suggests that Caral, as the 150-acre complex of pyramids, plazas and residential buildings is known, was a thriving metropolis as Egypt's great pyramids were being built. The energetic archaeologist believes that Caral may also answer nagging questions about the long-mysterious origins of the Inca, the civilization that once stretched from modern-day Ecuador to central Chile and gave rise to such cities as Cuzco and Machu Picchu. Caral may even hold a key to the origins of civilizations everywhere.

Though discovered in 1905, Caral first drew little attention, largely because archaeologists believed the complex structures were fairly recent. But the monumental scale of the pyramids had long tantalized Shady. "When I first arrived in the valley in 1994, I was overwhelmed," she says. "This place is somewhere between the seat of the gods and the home of man." She began excavations two years later, braving primitive conditions on a tight budget. Fourteen miles from the coast and 120 miles north of Peru's capital city of Lima, Caral lies in a desert region that lacks paved roads, electricity and public water. Shady, who enlisted 25 Peruvian soldiers to help with the excavations, often used her own money to advance the work.

For two months she and her crew searched for the broken remains of pots and containers, called potsherds, that most such sites contain. Not finding any only made her more excited; it meant Caral could be what archaeologists term pre-ceramic, or existing be-

CIVILIZATION FOUND: Caral's Pirámide Mayor lay disguised in a mantle of rubble for centuries, which proved a boon to Lima archaeologist Ruth Shady Solís (above left, holding the material she used to date the site) because it thwarted potential looters—from 16th-century conquistadores to latter-day campesinos—and gave her a pristine look at what she believes to be the oldest city in the Americas. In a series of makeovers, the entire city, from the pyramids' walls to the amphitheater floor, was painted a single color: red, white, black, yellow or blue.

fore the advent of pot-firing technology in the area. Shady eventually concluded that Caral predated Olmec settlements to the north by 1,000 years. But colleagues remained skeptical. She needed proof.

In 1996, Shady's team began the mammoth task of excavating Pirámide Mayor, the largest of the pyramids. After carefully clearing away several millennia's worth of rubble and sand, they unearthed staircases, circular walls covered with remnants of colored plaster, and squared brickwork. Finally, in the foundation, they found the preserved remains of reeds woven into bags, known as *shicras*. The original workers, she surmised, must have filled these bags with stones from a hillside quarry a mile away and laid them atop one another inside retaining walls, gradually giving rise to the city of Caral's immense structures.

Shady knew that the reeds were ideal subjects for radiocarbon dating and could make her case. In 1999, she sent samples of them to Jonathan Haas at Chicago's Field Museum and to Winifred Creamer at Northern Illinois University. In December 2000, Shady's suspicions were confirmed: the reeds were 4,600 years old. She took the news calmly, but Haas says he "was virtually in hysterics for three days afterward." In the April 27, 2001, issue of the journal *Science*, the three archaeologists reported that Caral and the other ruins of the Supe Valley are "the locus of some of the earliest population concentrations and corporate architecture in South America." The news stunned other scientists. "It was almost unbelievable," says Betty Meggers, an archaeologist at the Smithsonian Institution. "This data pushed back the oldest known dates for an urban center in the Americas by more than 1,000 years."

What amazed archaeologists was not just the age but the complexity and scope of Caral. Pirámide Mayor alone covers an area nearly the size of four football fields and is 60 feet tall. A 30-foot-wide staircase rises from a sunken circular plaza at the foot of the pyramid, passing over three terraced levels until it reaches the top of the platform, which contains the remains of an atrium and a large fireplace. Thousands of manual laborers would have been needed to build such a mammoth proj-

OUTLINES OF A CIVILIZATION EMERGE: Lined with graduated seating areas and perhaps box seats for the elite, the amphitheater (seen from the air, opposite) appears to be Caral's ceremonial center, which Peruvian soldiers (opposite, bottom) helped excavate. Ritual sacrifice (including that of a child at left) was carried out at the major temple (in ruins next to the amphitheater). Both structures were built with reed bags (above) filled with rocks. Amphitheater excavations uncovered a set of fancifully carved bone flutes (below).

WHY DID THEY LEAVE THE COAST?

Fishermen today ply Peru's coast in bullrush boats (top) as they have for thousands of years, harvesting the rich marine life sustained by the cold Humboldt Current. Leaving this food-rich environment and establishing the urban center of Caral deep in the desert became possible only through large-scale irrigation, enabling farmers to grow squash plants (above), sweet potatoes and beans. For protein, the people of Caral relied on fish.

ect, not even counting the many architects, craftsmen, supervisors and other managers. Inside a ring of platform pyramids lies a large sunken amphitheater, which could have held many hundreds of people during civic or religious events. Inside the amphitheater, Shady's team found 32 flutes made of pelican and condor bones. And, in April 2002, they uncovered 37 cornets of deer and llama bones. "Clearly, music played an important role in their society," says Shady.

The perimeter of Caral holds a series of smaller mounds, various buildings and residential complexes. Shady discovered a hierarchy in living arrangements: large, well-kept rooms atop the pyramids for the elite, ground-level complexes for craftsmen, and shabbier outlying shantytowns for workers.

But why had Caral been built in the first place? More important, why would people living comfortably in small communities perched on the Pacific Ocean with easy access to abundant marine food choose to move inland to an inhospitable desert? If she could answer this question, Shady believed she might begin to unravel one of the knottiest questions in the field of anthropology today: What causes civilizations to arise? And what was it about the desert landscape of Peru's Supe Valley that caused a complex, hierarchical society to flourish there?

Her excavations convinced Shady that Caral had served as a major trade center for the region, ranging from the rain forests of the Amazon to the high forests of the Andes. She found fragments of the fruit of the *achiote*, a plant still used today in the rain forest as an aphrodisiac. And she found necklaces of snails and the seeds of the coca plant, neither of which was native to Caral. This rich trading environment, Shady believes, gave rise to an elite group that did not take part in the production of food, allowing them to become priests and planners, builders and designers. Thus, the class distinctions elemental to an urban society emerged.

But what sustained such a trading center and drew travelers to it? Was it food? Shady and her team found the remains of sardines and anchovies, which must have come from the coast 14 miles to the west, in the excavations.

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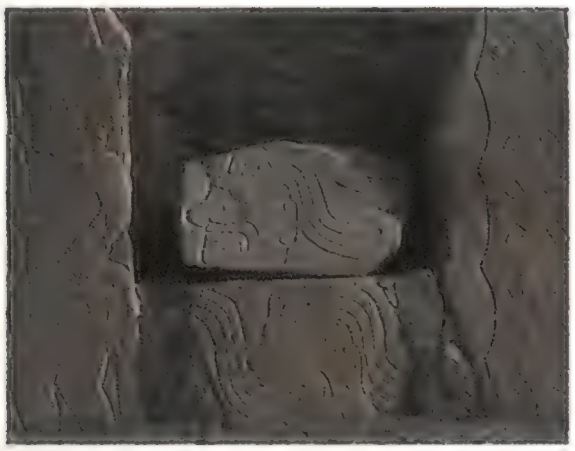

FACES FROM THE DISTANT PAST: The gigantic stone profile of a head with its mouth wide open, its eyelids closed and its hair streaming (top) spreads across 130 feet of desert a half-mile outside Caral. Built by the inhabitants of Caral for unknown reasons, it bears a curious resemblance to the stone relief (above) found at a site that thrived 1,000 years later about 100 miles north of Caral. The similarity hints at Caral's importance to later development of culture and civilization in the region.

But they also found evidence that the Caral people ate squash, sweet potatoes and beans. Shady theorized that Caral's early farmers diverted area rivers into trenches and canals, which still criss-cross the Supe Valley today, to irrigate their fields. But because she found no traces of maize (corn) or other grains, which can be traded or stored and used to tide a population over in difficult times, she concluded that Caral's trade leverage was not based on stockpiling food supplies.

It was evidence of another crop in the excavations that gave Shady the best clue to the mystery of Caral's success. In nearly every excavated building, her team discovered great quantities of cotton seeds, fibers and textiles. Her theory fell into place when a large fishing net, unearthed at an unrelated dig on Peru's coast, turned out to be as old as Caral. "The farmers of Caral grew the cotton that the fishermen needed to make the nets," Shady speculates. "And the fishermen gave them shellfish and dried fish in exchange for these nets." In essence, the people of Caral enabled fishermen to work with larger and more effective nets, which made the resources of the sea more readily available. The Caral people probably used dried squash as flotation devices for nets and also as containers, thus obviating any need for ceramics.

Eventually Caral would spawn 17 other pyramid complexes scattered across the 35-square-mile area of the Supe Valley. Then, around 1600 B.C., for reasons that may never be answered, the Caral civilization toppled, though it didn't disappear overnight. "They had time to protect some of their architectural structures, burying them discreetly," says Shady. Other nearby areas, such as Chupacigarro, Lurihuasi and Miraya, became centers of power. But based on Caral's size and scope, Shady believes that it is indeed the mother city of the Incan civilization.

She plans to continue excavating Caral and says she would someday like to build a museum on the site. "So many questions still remain," she says. "Who were these people? How did they control the other populations? What was their main god?"

—John F. Ross

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Boy Wonder

FOR A FEW FLEETING MOMENTS IN 1956, ELVIS PRESLEY WAS STILL AN UNAFFECTED KID FROM TUPELO, MISSISSIPPI, AND THE ROAD TO STARDOM SEEMED PAVED IN POSSIBILITY

PHOTOGRAPHS BY ALFRED WERTHEIMER

TWENTY-FIVE YEARS AGO this month, on August 16, 1977, a bloated, drug-dependent Elvis Presley was found dead in the bathroom of Graceland, his Memphis, Tennessee, mansion. He was 42 years old. But long before success, fame and pharmaceuticals led him to an early grave, there was another Elvis—more boy than man, more comet than star, and more promise than fulfillment.

In March 1956, Elvis was 21, and his recording of "Heartbreak Hotel" was climbing the charts. Freelance photographer Alfred Wertheimer got an assignment from RCA records to shoot the young singer, whose contract the company had just purchased for $35,000 from Sam Phillips' Sun Records. "I was informed that I was going to photograph Elvis Presley," says Wertheimer, now 72. "My response was, 'Elvis who?'" The message from RCA, Wertheimer recalls, was don't worry about it. "They told me: this kid might vanish from the scene."

Wertheimer's instincts told him otherwise. That summer, he went on the road with Presley, photographing him on a train and at home in Memphis (with his father, Vernon, on the backyard patio; kissing his mother, Gladys; listening to his own records with Barbara Hearn, his high school sweetheart).

Along the way, Wertheimer distilled an innocence that would soon be lost. By September, when Presley strode onto the stage of *The Ed Sullivan Show*, the transformation of unaffected country boy into commodity had begun.

—Alina Corday-Taylor

ALL: ALFRED WERTHEIMER/CONTACT PRESS IMAGES

PALM PLIGHT

ASSAULTED BY MYRIAD THREATS TO THEIR SURVIVAL, PALM SPECIES AROUND THE WORLD FACE THE LIKELIHOOD OF EXTINCTION

BY MIKE GRUDOWSKI

PHOTOGRAPHS BY THOMAS MICHAEL ALLEMAN

ON A DRIZZLY MORNING IN PARADISE, KEN WOOD AND I ARE PADDING ALONG THE RIM OF the Kalalau Valley, some 4,000 feet above the ocean on Kauai's Na Pali coast. The scenery is glorious, but something is missing. This is Hawaii, yet there's not a palm tree in sight—and palm trees are what Wood is all about. A field botanist originally from New York with a laid-back manner and filaments of gray in his close-cropped beard, Wood, 47, works for the National Tropical Botanical Garden (NTBG), on Kauai. He spends a lot of time looking for rare palms. When he finds one, he climbs it (if it's big), snips off a frond, plucks a few seeds and shinnies back down. Today he's looking for a fan palm of the genus *Pritchardia*, a group that encompasses Hawaii's only native palms.

There are 27 species of *Pritchardia*, 23 of which are found in Hawaii. Eight are officially classified as endangered, but Wood is convinced others as well face the threat of extinction. Not long ago, he took a census on East Maui of one of them, *P. arecina*. "There are only 500 left," he tells me, "and there is no regeneration. When there's no regeneration, you don't need statistics to show that the species will die off."

The notion that Hawaii is losing its palms may sound faintly ridiculous to anyone who's visited the island chain. Coconut palms grow so abundantly you'd think resorts would have to supply tourists with hard hats along with the customary leis. But coconuts, like taro, breadfruit and a host of other Hawaiian denizens, didn't originate here. They arrived with the Polynesian voyagers who settled on the islands some 1,600 years ago. For millennia before that, the fan palms Wood now combs the backcountry in search of dominated the landscape.

Hawaii is by no means the only place where palms are in a pickle. Of the world's nearly 3,000 species, about 220 are "highly threatened with extinction," according to the International Union for Conservation of Nature and Natural Resources, and many others are headed in the same direction. Some, like the one named *Hyophorbe amaricaulis*, have already reached their end. This species is down to a single tree, tall and sparsely crowned, living out its days in a botanical garden in Curepipe on the island of Mauritius. It fruits regularly but the seeds it produces are not viable, and clones made from this plant have not been able to survive outside a laboratory environment. Someday the last living *H. amaricaulis* on earth will go the way of another, better known native of Mauritius: the dodo.

As is the case with endangered plants and animals in general, a disproportionate number of endangered palm species are found on islands. Madagascar, the world's fourth-largest island (about the size of Texas), is an object lesson in the problems that face palms across the tropics. In the past century, the human population there has quadrupled to 12 million and most of the previously undisturbed

Mapping *Pritchardia* (left) in the wild, Ken Wood (above, on the rim of Hawaii's Kalalau Valley) hopes to save the palms from extinction.

land has been converted to agriculture. Consequently, nearly half of Madagascar's 176 palm species are endangered or presumed extinct, with unknown ramifications for the island's birds and other wildlife. (For more on Madagascar, see Around the Mall, p. 39.)

If they didn't constitute such a varied family of plants, palms might be in even worse shape. They grow in African streams and 9,000 feet high in the Andes. They're found in sweltering mangrove swamps in Southeast Asia and in blizzard-lashed highlands in the Himalayas. Some top out at six inches, and others tower upwards of 200 feet; rattan palms (which grow as vines) can exceed 600 feet in length. The palm family boasts the plant kingdom's largest seed, the double coconut of the Seychelles, which weighs more than 40 pounds. African raffia palms have the longest leaves on earth, some reaching 75 feet or more. "Because palms are so diverse, they've risen to dominance in many ecosystems," says Scott Zona, a palm botanist at Fairchild Tropical Garden in Coral Gables, Florida. "They're characteristic of savanna forests, rain forests, gallery forests along rivers, and mangroves. There's opportunity in diversity."

Like many plants, palms get help in seed dispersal from the creatures who depend on them for nutrition. The date palm tree of the desert Middle East produces 500 pounds of seeds, or dates, each year. Dates are sweet, so sugar-loving "dispersers" from parakeets to pachyderms consume their flesh and then drop, regurgitate or otherwise deposit pits wherever they go. In similar fashion, various other palm seeds or fruits feed electric eels in the Amazon, vultures in South Africa, orangutans in Indonesia, coyotes in Mexico and elephants in India.

Coconut palms, however, rely on seawater for dispersal. A coconut palm can grow 130 feet tall, so its seed comes packaged to survive its eventual crash to earth with a husk made of cushiony fibers called coir. The nut may grow where it lands, or if it plunks into the ocean and gets swept away, it may take root 3,000 miles or more from the mother tree. Coconuts from the West Indies have been cast up on the shores of England and northern Europe.

Palms put food on the table for people directly and indirectly. Almost half a million people in the South Pacific rely entirely for their livelihood on coconut palms grown commercially on Fiji and other Pacific islands, like Samoa. Coconut oil and coconut milk are important food sources in this part of the world. There are very few parts of a palm that somebody, somewhere, hasn't found useful. If a latter-day Robinson Crusoe got marooned on an island blessed with a serendipitous mix of palm species, he could nibble on dates while toasting coconut meat over coconut-charcoal embers; nestle into a rattan-palm recliner in his palm-post bungalow under a palm-thatch roof while writing a screenplay with palm dye on palm paper; buff his palm-plank surfboard with carnauba palm wax; stroll in the rain with a palm cane and a palm-frond umbrella; take a cue from Venezuela's Warao Indians by using a palm leaf as a canoe sail; and end the day watching a palm-fringed sunset over a palm-wine nightcap.

"Palms are the trees of life," says Mike Maunder, NTBG's conservation director. "They're absolutely fundamental to many tropical ecologies and economies. Take away palms, and tropical ecosystems can be profoundly damaged."

According to Melany Chapin, who oversees NTBG's collections of live plants, the main problem with Hawaii's na-

Scientists like botanist Melany Chapin (far left, potting *Pritchardia* seedlings) are trying to save more than 200 palm species from extinction. *Pritchardia* flowers (above) are relatively large. Early Polynesian settlers ate *Pritchardia* fruit (left), which they called *hawane*.

tive palms is that "they don't have any defense mechanisms, because they never had any native predators to contend with." For millions of years, Hawaii's pristine lands existed in splendid isolation. Then the Polynesians introduced rats and lizards along with their crop plants. Captain James Cook and other explorers left behind pigs, sheep, goats and cattle. Mongooses, imported from Jamaica in the 1880s to prey on rats in sugarcane fields, developed a taste for native birds.

Today, just about any time a *Pritchardia* tries to reproduce, Hawaii's biological invaders go to work. Rats devour most seeds before they can germinate. Goats munch any seedlings that manage to sprout. Pigs rut up the ground, damaging fragile root systems and causing erosion in steep terrain. Vickie Caraway, a botanist in Hawaii's Division of Forestry and Wildlife, says that introduced weeds are a big problem too. They form thick mats over the soil in many areas, preventing the palm seeds from germinating.

Habitat destruction compounds the problems. Over the centuries, much of Hawaii has been burned, bulldozed and built up with cane and pineapple fields, towns, condominiums, hotels, marinas and golf courses. The lowland dry forest, where native palms once dominated, has taken the hardest hit; more than 96 percent of it is gone.

Unethical plant collectors make things worse still. The only four *P. viscosa* palms known to exist in the wild grow along the Powerline Trail on the eastern side of Kauai. Not long ago, NTBG botanists were thrilled to discover a fifth, a seedling that had sprung up alongside the others. When

Hand-colored lithographs, such as these from *Curtis's Botanical Magazine*, still published today in London, gave 19th-century readers in less tropical climes a sense of the intricate and varied glory of the nearly 3,000 species of palms. (From left to right: Malaysia's dwarf *Pinanga* palm; the South Pacific's *Licuala grandis*, or giant ruffled fan palm; and Australia's hardy Australian cabbage, or fan, palm.)

the scientists returned to the site, the seedling was gone, with a gaping hole and telltale shovel marks in its place.

As daunting as these combined threats are, hope remains. On the north shore of Kauai, NTBG is restoring *Pritchardia* to the wild in a 1,000-acre preserve. But most of the *Pritchardia* seeds Wood and his fellow scientists bring back from their expeditions get planted in the garden's 286-acre grounds on Kauai's south shore. There and in other protected tracts, the staff is cultivating a kind of botanical menagerie of rare palms, in hopes of preserving as much genetic diversity as possible. These plants provide a significant hedge against the possibility of extinction. Those four *P. viscosa* beside the Powerline Trail, for instance, now have 16 cousins growing in captivity.

Several groups are trying to save Hawaii's palms by protecting their habitat. About two million acres of native forest and scrubland remain intact, according to the Nature Conservancy, and a quarter of them are managed by federal or state agencies, or private groups. Both national parks in Hawaii have fenced off large areas and eradicated pigs and goats. On Maui, Oahu and Molokai, a number of land partnerships have been formed in recent years, bringing together all manner of public and private landowners in cooperative efforts to thin out invasive species and protect native ones.

Meanwhile, Ken Wood and other scientists are doing what they can to preserve palms in the wild. As Wood and I trudge cautiously downhill, scanning the landscape for *Pritchardia*'s stiff, fan-shaped fronds, we surprise a pair of feral goats, munching at a bank of ferns. They skip down a 70-degree wash. "Bane of the terrain," Wood mutters.

We're probing below the rim of Honopu Valley now. It's noon, and the mist has yielded to blazing sun. Suddenly Wood exclaims: "Whoa! There's a *Pritchardia*."

Sure enough, 50 yards upslope from us, a solitary green fan peeks out from some twisted ohia branches. It's a *P. minor*, one of perhaps 500 remaining. The species can grow 30 feet tall, but this young specimen is only a six-footer. Wood cuts off a frond with his knife, folds it along its accordion pleats, wraps it with pink and black tape, and thrusts it and a handful of seeds into a plastic sandwich bag. He jots down notes with a stubby pencil: number of fronds, diameter of stem, other nearby species, elevation 3,190 feet, 300 degrees northwest. (All of that information will be stored in an NTBG database used for mapping palm distributions and abundance.) Then we head home—mission accomplished, for today, but the battle goes on.

What's at stake can't be measured in strictly biological terms. If palm trees should vanish from the earth, something more than genetic diversity and habitats will have been lost forever. An essential aspect of our tropical fantasies will disappear as well. Without palm trees, paradise will never be the same.

Mike Grudowski is a frequent contributor to Outside and Men's Journal. Photographer Thomas Michael Alleman is based in Los Angeles.

ALL: CURTIS'S BOTANICAL MAGAZINE; VOL. I OF THE 4TH SERIES, PLATE 8011; VOL. XXXIX OF THE 3RD SERIES, PLATE 6704; VOL. XXXIII OF THE 3RD SERIES, PLATE 6274

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Odd DUKW

ON LAND AND IN THE WATER, WORLD WAR II'S AMPHIBIAN WORKHORSE SHOWED THE SKEPTICS A THING OR TWO—NOW IT SHOWS TOURISTS THE SIGHTS

BY THOMAS B. ALLEN

PHOTOGRAPHS BY CAMERON DAVIDSON

KIPLING'S DESCRIPTION OF THE CIVILIAN attitude toward the soldier in peacetime—"Chuck him out, the brute!"—might as plausibly have applied to many American military vehicles after World War II. With two notable exceptions: the plucky jeep, whose offspring continue to bounce merrily along, and the lesser known DUKW, or "Duck." These hardy amphibians still earn the kind of accolades once voiced by Winston Churchill as he recalled watching them carry supplies for the liberation of France. "I was fascinated to see the D.U.K.W.s swimming through the harbour, waddling ashore, and then hurrying up the hill to the great dump where the lorries were waiting to take their supplies to the various units. Upon the wonderful efficiency of this system . . . depended the hopes of a speedy and victorious action."

From Hawaii to Australia and from Seattle to Washington, D.C., DUKWs that once went to war now transport tourists on amphibious sightseeing treks. While the visitors gawk at the sights, the natives gawk at the DUKWs. Former sight-seeing DUKW captain Jim Nichols once had three wartime DUKW drivers as passengers. "I let them take turns driving in the Potomac," he says. "There's a steep pile of rocks along the riverbank. They told me they could take it up those rocks just the way they did in World War II. They told me things about the DUKW I never knew."

THE DUKW SAGA BEGAN IN A WORLD War II U.S. government agency where everyone took a pledge of secrecy, so like many an old DUKW cruising today, the tale is a bit patchy. But there are enough memories and declassified records to document how the DUKW was born in a mere 42 days.

On March 20, 1942, Maj. Gen. Jacob L. Devers, chief of the Army's Armored Force, wrote to Vannevar Bush, director of the Office of Scientific Research and Development, asking whether the OSRD could come up with a way to float light tanks from ship to shore. Bush, who had been vice president of MIT, had made his secretive agency independent of the military, turning to universities and industry for scientists and engineers. His team would help build the atomic bomb and bring to the war such innovations as radar, the bazooka, mine detectors and the proximity fuse. *Colliers* magazine once referred to him as the "man who may win or lose the war."

During the Allied assault on Anzio, Italy, in 1944, DUKW drivers ferrying cargo to the Fifth Army beachhead had to evade Luftwaffe Messerschmitts trying to bomb them out of the water.

Bush used Devers' request to advance an idea his people had been working on for months: making a standard Army truck swim so that it could carry men and supplies from ship to shore and across beaches during invasions. Bush handed the project to his chief technical aide, Palmer Cosslett Putnam, who had a reputation for getting things done.

On April 21, Putnam contracted with a subsidiary of General Motors to design, build and test the new vehicle. Three days later, a GM team began putting together a model made of wood, sheet metal and

These days a million U.S. tourists each year (like these in the nation's capital) get a DUKW's-eye view of local landmarks.

cardboard. Working through a weekend, they finished it on Monday, April 27. They named the project DUKW, based on the GM manufacturing code: D for the model year 1942; U for utility truck, amphibious; K for front-wheel drive; and W for dual rear-driving axles.

Putnam, a yachtsman, asked the naval architectural firm of Sparkman & Stephens to design the hull. Roderick Stephens, known, with his older brother Olin, for winning the 1937 America's Cup, took on the job. He came up with a welded hull that fit snugly under the chassis of a standard Army truck. It sacrificed not an ounce of the truck's cargo capacity: it could carry 5,000 pounds or 25 soldiers with gear.

GM engineers redesigned the truck's rugged transmission so a driver could smoothly shift power from the wheels to a propeller. Even in water, the driver steered normally; when the front wheels turned, so did a rudder at the stern. By June 2, engineers had a pilot model, which they tested on land and, the next day, in a lake near Pontiac, Michigan, with 63 designers and builders on board. In water, the DUKW could go 5 miles per hour; on land its top speed was 50 mph. "She's better in water than any truck, and she'll beat any boat on a highway," Stephens joked.

That summer, he and the engineers worked on getting their DUKWs in a row. But despite a grudging Army order for 2,000 vehicles, there was an "almost total absence of official interest" in the DUKW, according to a project report. "The OSRD was getting nowhere," says Office of Strategic Services (OSS) veteran Donal McLaughlin.

McLaughlin, now retired and living in a Maryland suburb, had just joined the OSS—the intelligence agency from which the CIA would later emerge—and was assigned to work in secret on a documentary about the DUKW's capabilities. The film was shown to General Devers and to officers in the Army Corps of Engineers. Devers, Bush later wrote, "was the only man in the Army in an important post who fully saw the [DUKW's] possibilities." The film, along with some backstage Pentagon lobbying by the well-connected Putnam and others, managed to keep hope alive. Fearing the amphibians "might sit out the war in some Detroit warehouse," as Putnam put it, he rededicated himself to championing them through the military bureaucracy.

He invited some 90 officers and civil-

ians to a demonstration off Provincetown, Massachusetts, on Cape Cod, in the first week of December 1942. The plan called for a covey of DUKWs to unload a ship and carry her cargo inland. Then, on the night of December 1, a storm of near-hurricane force hit Provincetown. As it happened, the Coast Guard yawl *Rose*, conscripted for wartime, was watching for German U-boats. As the *Rose* made for port, winds of 60 mph slammed her onto a sandbar, where she began to break up. Wind and waves turned back rescue boats, and a desperate Coast Guard officer, who knew about the gathering of DUKWs, called Stephens.

Stephens promptly loaded marine photographer Stanley Rosenfeld and several others onto a DUKW, which then roared down the beach, plunged into the surf and headed for the *Rose*. Maneuvering the DUKW alongside the foundering craft, Stephens picked up the seven-man crew and returned to shore. Rosenfeld headed for his New York studio, printed the dramatic rescue photos, got on a train to Washington and handed them to a high-ranking Army official. "I suggested he might enjoy showing them to the Secretary of the Navy," Rosenfeld recalls. "He was most delighted to demonstrate an Army rescue of the Navy [the Coast Guard was then under Navy control] and was sure that President Roosevelt would also enjoy the event, and so he did."

At the Provincetown demonstrations four days later, in ten-foot waves, the DUKWs unloaded cargo and a gun battery from a Liberty ship in record time, and carried howitzers and men through surf and across sand dunes. Army observers were enthusiastic about the demonstration, but higher brass, still unable to fit the amphibians into any tactical plan, remained unconvinced.

Somehow, 55 of the still-unloved hybrids wound up in Algeria, where Lt. Gen. George S. "Old Blood-and-Guts" Patton, preparing to invade Sicily, knew exactly what to do with them. He asked for as many as he could get, and when American and British troops stormed ashore beginning July 10, 1943, so did some 1,000 DUKWs. The amphibious vehicles bore men and ammunition onto the beaches—and, in some cases, tied up traffic farther inland in the narrow Sicilian streets. While

More than 200 converted World War II DUKWs ply the nation's waterways. The ungainly amphibian was created in a mere 42 days but had to battle Army brass to get into combat.

DUKWs landed 40 percent of supplies at Normandy. Gen. Dwight Eisenhower (center, with Gen. George Marshall, left, and Adm. Ernest King, to Ike's left) called them invaluable.

rough seas stymied Navy landing craft, Army DUKWs plunged in and out of the surf, shuttling supplies and reinforcements ashore.

From that operation on, DUKWs participated in nearly every Allied invasion. On D-day, the first of some 2,000 of them began delivering combat and support troops, along with supplies, to Normandy's beaches, then headed back to offshore ships with the wounded. At Normandy alone, DUKWs carried 18 million tons ashore. And when the American soldiers crossed the Rhine, 370 DUKWs crossed with them.

African-American soldiers, segregated into all-black units during World War II, were typically assigned to supply or construction duty, often behind the lines. But those assigned to DUKWs often found themselves under fire. These men challenged the existing prejudices against blacks in combat positions.

In France and Germany the DUKWs were sometimes used to carry troops across terrain cut by streams and rivers. In his memoir *Parachute Infantry*, David Kenyon Webster describes riding a DUKW "like a sailboat in a gentle swell" into Berchtesgaden, gateway to Hitler's alpine lair, a triumphant moment for a vehicle that Gen. Dwight D. Eisenhower later called "one of the most valuable pieces of equipment produced by the United States during the war."

In the Pacific, Marines used the DUKW as an assault craft, forming amphibian truck companies known, not suprisingly, as the Quack Corps. For landings in heavy surf, Marine drivers learned to gun the engine and ride the waves, landing well up onshore. When Marines landed on Saipan in June 1944, LSTs—Landing Ship, Tank—disgorged the DUKWs.

Arthur W. Wells, a sergeant in the Second Amphibian Truck (DUKW) Company, says many Marines first jeered at the strange-looking hybrids, shouting "Quack! Quack!" as they lumbered by. The jeers turned to cheers when they saw DUKWs carry wounded Marines out to hospital ships.

By the time the war ended in 1945, GM had built 21,147 DUKWs, many of which would end their days rusting away on Pacific battlefields or in forgotten storage depots in Europe. Those that made it back to the United States joined the gargantuan postwar garage sale. Some DUKWs served as rescue vehicles for fire departments in flood-prone towns. Hundreds were converted to odd-looking dump trucks or wreckers, and some went to sea. In California in the late 1940s, hunters of basking sharks harpooned their enormous prey from DUKWs.

Melvin Flath, owner of a Milwaukee trucking firm, was the first person to put the amphibians to sight-seeing service, having picked one up at a war-surplus truck auction in 1946. He installed some used bus seats and began charging 50 cents for rides around a local lake.

Gradually, the tourist DUKW idea took off. By the 1990s, more than a million passengers a year were taking the tourist plunge in approximately 225 DUKWs around the country. Today, no one knows precisely how many DUKWs there are in the United States, though estimates range from 300 to 1,000, many owned by collectors.

Then came May 1, 1999. A Hot Springs, Arkansas, DUKW named *Miss Majestic* entered Lake Hamilton carrying some 20 passengers. About 250 yards from shore, the craft began filling with water and sank in 30 seconds. Thirteen people, including three children, drowned. Investigators blamed the tragedy on a dislodged rubber seal.

The Coast Guard and the National Transportation Safety Board moved swiftly to recommend tighter inspections and impose new safety requirements. At a hearing on DUKW safety in December 1999, Robert F. McDowell, manager of a tourist DUKW business, in Branson, Missouri, told investigators that he replaces virtually every unseen part of a military DUKW with modern components for sight-seeing. McDowell, who also runs a small military museum, added that building the amphibians from scratch is probably more cost-effective. So tourists will likely soon be sitting in vehicles that look like DUKWs and swim like DUKWs—but won't really be DUKWs. It won't happen overnight. Like old soldiers, DUKWs never die; they just fade away.

Thomas B. Allen wrote on the stalking of a Soviet sub in March 2001. Frequent contributor Cameron Davidson is based in Virginia.

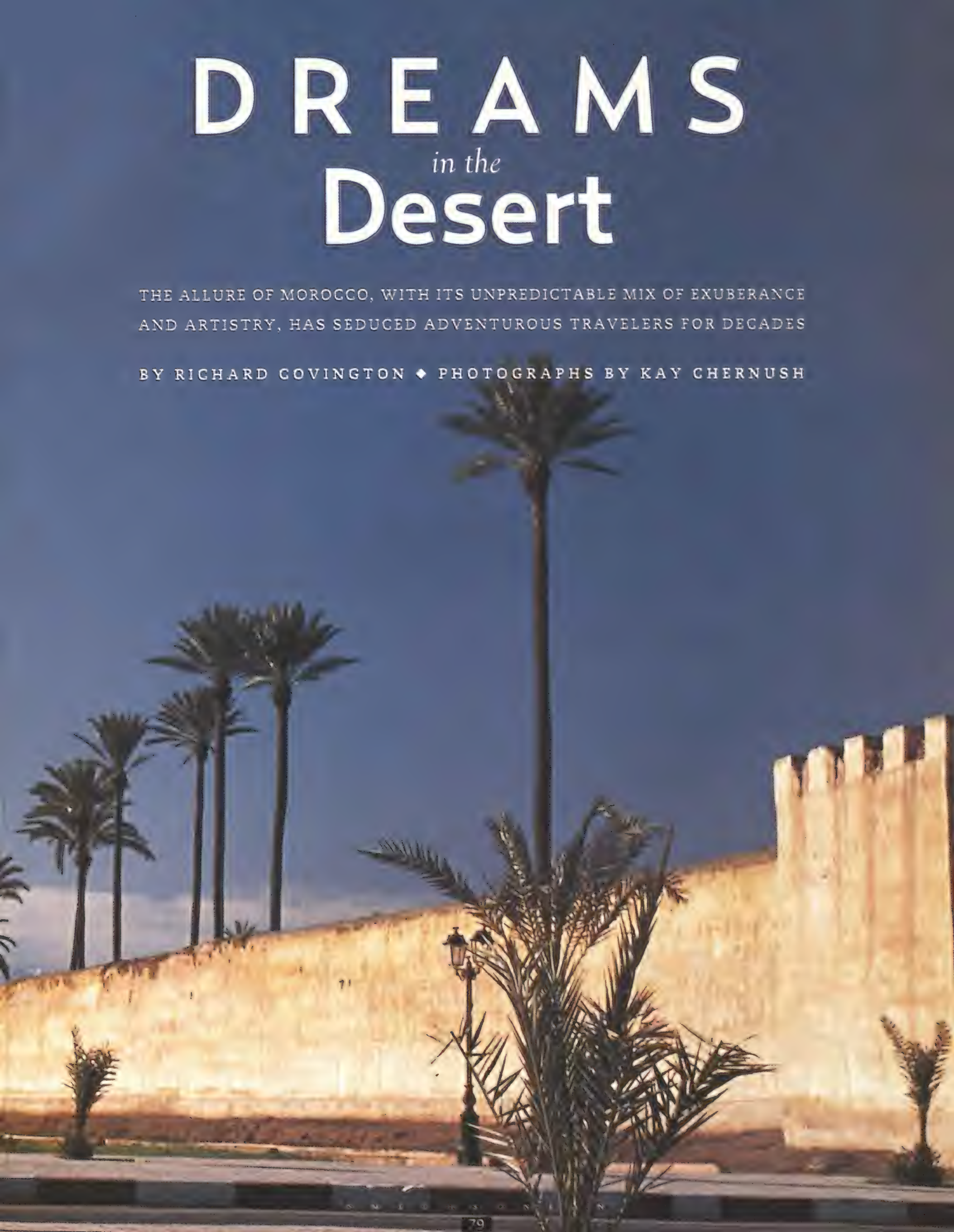
FRANK SCHERSCHEL/TIMEPIX; P. 74 MYSTIC SEAPORT, RODERICK STEPHENS COLLECTION, MYSTIC, CT

Against the backdrop of the Atlas Mountains, the Agdal garden (called Marrakech's Versailles) is a quiet oasis in urgent need of restoration.

DREAMS *in the* Desert

THE ALLURE OF MOROCCO, WITH ITS UNPREDICTABLE MIX OF EXUBERANCE AND ARTISTRY, HAS SEDUCED ADVENTUROUS TRAVELERS FOR DECADES

BY RICHARD COVINGTON ◆ PHOTOGRAPHS BY KAY CHERNUSH



CURLED UP UNDER BLANKETS INSIDE MY goat-hair tent, I thought I was settled in for the night. But now, drummers are beating a jazzy rhythm outside and women's ululations pierce the night like musical exclamation points. The Brides' Fair at Imilchil, Morocco's three-day Berber Woodstock of music, dancing, camel trading and marriages, is in full cry. Sleep? Out of the question.

Squeezing inside a large tent overflowing with revelers, I do my best to keep up with the crowd's staccato clapping. A woman stands up, holding her skirts in one hand and swinging her hips alluringly to the beat. Another woman leaps up, dancing in mocking, provocative challenge. As the two of them crisscross the floor, the crowd and musicians pick up the pace. This spontaneous, choreographic contest makes me feel I'm being allowed a backstage glimpse into Berber sensuality. The women keep swirling as the drummers sizzle on until the music reaches fever pitch, then everyone stops abruptly as if on cue. Momentarily exhausted, dancers and musicians collapse into their seats, and the tent hums with conversation. Minutes later, the sound of distant drums beckons the merrymakers, who exit en masse in search of the next stop on this rolling revue.

The traditional Moroccan crafts of tile-making and mosaics are in such demand worldwide that artisans flock to Fés to work in shops such as the one owned by sixth-generation *zillij* (tile) artist Abdelatif Benslimane (above), where they can experiment with more subdued colors that appeal to 21st-century tastes. Students (right) at the institute for traditional crafts stick more rigorously to motifs reproducing 14th-century designs.

In Morocco, there's always something luring you to the next tent—or its equivalent. This unpredictable mix of exuberance and artistry has enticed adventurous travelers for decades—from writers (Tennessee Williams, Paul Bowles and William Burroughs), to backpackers and hippies, to couturiers (Yves Saint Laurent) and rock and film stars (the Rolling Stones, Sting, Tom Cruise and Catherine Deneuve). Morocco's deserts, mountains, casbahs and souks have starred in such popular films as *Black Hawk Down*, *Gladiator* and *The Mummy* as well as such classics as Alfred Hitchcock's *The Man Who Knew Too Much* and David Lean's *Lawrence of Arabia*.

I was drawn to Morocco as well by its image as a progressive Muslim country, a staunch American ally since Sultan Sidi Mohammed became the first foreign ruler to recognize an independent United States in 1777. Since assuming the throne in 1999 on the death of his father, Hassan II, the young reformist king Mohammed VI, now 39, has helped spark a remarkable cultural revival. Tourists from America and Europe keep filling its hotels to wander crowded alleys, trek the Atlas Mountains, visit the Sahara and relax inside Marrakech's palatial houses.

Westerners can hardly be blamed these days for being concerned about safety when traveling in parts of the Arab world. But the State Department, which alerts U.S. citizens to dangers abroad, has listed Morocco as a safe destination for years and continues to do so. Mohammed VI was among the first world leaders to offer condolences—and his assistance in rallying the Arab world to the war on terrorism—to President Bush after September 11. Moroccans have staged demonstrations in support of the United States, and American diplomats have praised Morocco's cooperation.

A MERE EIGHT MILES FROM SPAIN ACROSS the Gibraltar straits, Morocco, a long sliver of a country roughly the size of France, hugs the northwest corner of North Africa. The region and its native Berber population have been invaded by the

Marketplace by day, three-ring circus by night: As darkness falls on Marrakech's Place Djemaa el-Fna (top), it fills with performers and storytellers, acrobats, snake charmers and jugglers. For the hungry, vendors (above) offer everything from kabobs to pastries.

usual suspects, as Claude Rains might have put it to Humphrey Bogart in the film *Casablanca* (shot not in Morocco but in California and Utah): Phoenicians, Romans, Carthaginians, Vandals, Byzantines and Arabs all have exploited Morocco's geographic position as a trading link between Africa, Asia and Europe.

In the eighth century, Moulay Idriss, an Arab noble fleeing persecution in Baghdad, founded Fés as the capital of an independent Moroccan state. Nearly three centuries later, in 1062, a nomadic tribe of Berber zealots known as the Almoravids conquered Idriss' descendants and established Marrakech as the new capital. In the 17th century, Moulay Ismail, a pitiless conqueror, moved the capital to Meknes and established the currently ruling Alaouite dynasty.

France and Spain both sent troops to occupy parts of Morocco in the early 20th century after a series of tribal conflicts. Under separate treaties, Morocco became a joint French-Spanish protectorate. During World War II, French Morocco fell under German occupation and Spanish Morocco was ruled by pro-Nazi Franco forces. After the war, nationalists agitated for independence, which was granted in 1956, a year after the return of the exiled sultan, who became King Mohammed V, the present king's grandfather.

MY FIRST STOP IS FÉS, WHERE FOR THE past two decades teams from Harvard, MIT, Cornell, UCLA and the Prince Charles Foundation have returned year after year to study the 850-acre medina (the walled old town), in an effort to save this vast honeycomb of medieval whitewashed houses from further decline. With financing from the World Bank, the city has inventoried its more than 13,000 buildings and restored 250 of them.

"The main problem is overcrowding," says Hassan Radoine, codirector of the agency restoring the medina. "You find

ten families living in a wonderful palace built for a single family." As we squeeze through streets jammed with people, mules, carts and endless stalls of goods, Radoine guides me to the Medersa Bou Inania, a 14th-century school being meticulously restored by some of the city's master artisans. On our way, he points across a narrow street to massive crossbeams propping up buildings. "If one house caves in, others can fall like dominoes," he says. Radoine himself has led teams to rescue inhabitants from collapsed homes. "Before we began shoring up threatened structures in 1993, four or five people a year were killed," he says.

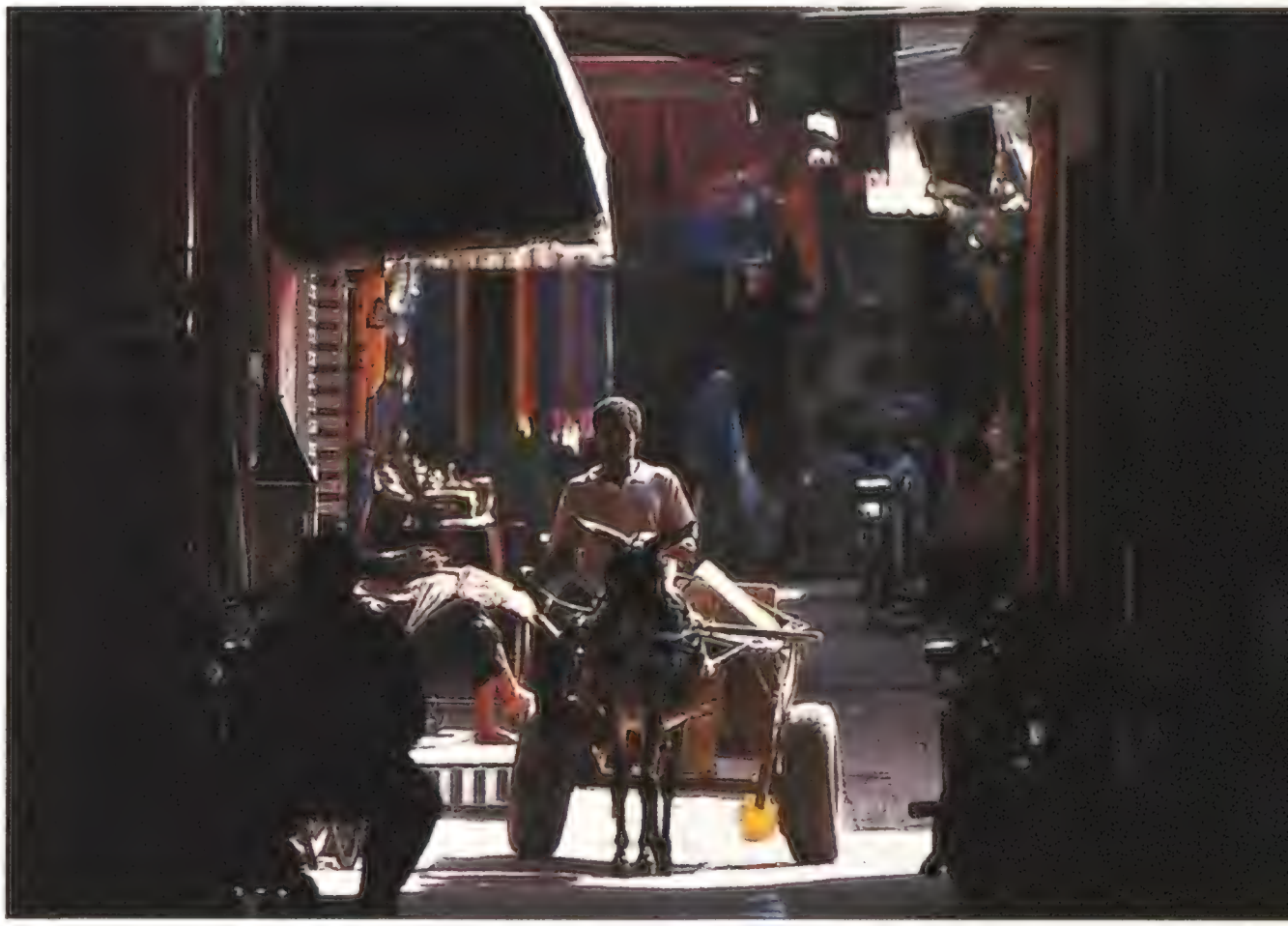
When we arrive at the former school, woodworkers are chiseling cedar planks beneath its soaring, ornately carved ceiling. The courtyard walls crawl with thousands of thumb-size green, tan and white tiles—eight-pointed stars, hexagonal figures and miniature chevrons. "The Merenid style was brought by exiles fleeing Spain and represents the apogee of Moroccan art and architecture," says Radoine. "They had a horror of the void; no surface was left undecorated."

I make my way out of the medina to the tile-making workshops of Abdelatif Benslimane in the city's French colonial quarter. Abdelatif and his son Mohammed run a thriving business, with clients from Kuwait to California. Mohammed, a seventh-generation *zillij* (tile) artisan, divides his time between Fés and New York City. As he shows me the workshop where craftsmen are cutting tiles, he picks up a sand-colored piece formed like an elongated almond, one of some 350 shapes used to create mosaics. "My grandfather would never have worked with a color like this," he says. "It's too muted." The tiles are bound for American clients, who generally prefer less flashy colors. "Even in Morocco, many turn to paler colors and simpler motifs," he adds. "With smaller new homes, bold designs are overpowering."

LEAVING FÉS, I DRIVE 300 MILES SOUTH along a new four-lane highway to verdant, prosperous Settat, then brave the country's daredevil road warriors on a two-lane artery that winds through hardscrabble market towns and red desert to Marrakech, which an international group of environmental crusaders is trying to revive as the garden oasis of North Africa.

Here Mohamed El Faiz, a leading horticulturist, drives me to the beautiful royal garden of Agdal. Constructed in the 12th century and covering two square miles, it is the oldest garden in the Arab world, at once a prime example of the city's former glories and urgently in need of restoration. Along the way, he points out scruffy olive groves across from the opulent Hotel La Mamounia. "King Mohammed V planted these groves in the late 1950s as a gift to the people," he says. "Now, the city is allowing them to die so that real estate developers can build." A severe drought, coupled with a population explosion, has made gardens more essential than ever. "The city's population has multiplied from 60,000 in 1910 to more than 900,000 now," says El Faiz, "and we have less green space."

At Agdal, El Faiz walks me past date palms and rows of orange and apple trees to a massive elevated reflecting pool beneath a glorious panorama of the high At-



Ethnobotanist Gary Martin and his colleague Fatima Zahmoun (top) inspect a public bath that needs restoration in the medina (walled old city). Martin, in partnership with an Austrian preservation organization, wants to reintroduce the *daliyas* (wood-and-iron grape arbors), fruit trees and aromatic plants that once flourished within the walled city. The labyrinthine souk (above) is virtually unchanged since the 12th century.

At the Brides' Fair at Imilchil, young Berber women dressed in traditional tribal costumes (top) dance to music played on goatskin tambourines as the crowd waits for the bride (above) to appear. Though no woman can be forced to marry someone she doesn't like, she is forbidden to marry against her father's wishes unless a judge gives her permission to do so.

las Mountains and the Jibelet foothills. During the 12th to the 16th centuries, sultans received foreign dignitaries on this spot. "The gardens demonstrated the sultans' mastery of water," says El Faiz. "When one had water, one had power."

Under a brick culvert, a metal gate releases water to the groves by a gravity-fed system flowing into small irrigation canals. "The engineers calculated the slope the canals needed to ensure that the precise amount of water reached each tree," he says. But the system has deteriorated. "If there's not restoration soon, the walls risk giving way, flooding the garden with millions of gallons of water."

Back in Marrakech I meet with Gary Martin, an American ethnobotanist who is trying to persuade the government to restore the gardens of the Bahia Palace, which are also dying. The palace is a sprawling 19th-century showcase of masterful tile work and wood carving. Martin and I wind past high-ceilinged ballrooms to emerge into a sun-blasted, abandoned garden that covers more than 12 acres. "It's a wreck," I say tactlessly, surveying the withered trees. "It's definitely devastated now," Martin cheerfully acknowledges. "But think of the potential! Just look at those *daliyas* [shady iron-and-wood grape arbors] and that immense bay laurel! If the irrigation system were fixed, this place could be a Garden of Eden in the heart of the medina."

Plunging back into the old city's dirt streets, I struggle to keep up as Martin maneuvers through swarms of merchants peddling everything from leather purses to azure pottery. Berber carpets cascade out of shops like multicolored waterfalls. After a depressing detour through the animal souk with its full-grown eagles trapped in cramped cages, pelts of leopards and other endangered species, we arrive at the Riad Tamsna, a 1920s house that Gary Martin and his wife, Meryanne Loum-Martin, have converted into a tea salon, bookstore and gallery.

The minute I pass through its heavy cedar doors, I feel I've entered a different world. A soft light filters onto a courtyard, sparely furnished with couches, handcrafted tables and a large basin of water with floating rose petals. It is soothingly quiet. "There are not many places in

the medina where you can rest and collect your thoughts," Meryanne says, as a waiter in a scarlet fez pours mint tea.

Of Senegalese descent and formerly a lawyer in Paris, Meryanne now designs furniture, and her candelabra, chairs and mirrors complement exhibitions of art, jewelry, textiles and crafts by local designers—as well as works by photographers and painters from France and the United States—in the restored palace. After tea, we go up to a rooftop terrace, where the 230-foot-high Koutoubia minaret dominates the skyline. As a copper sun sets, muezzins sound their overlapping calls to prayer, crackling over scattered loudspeakers like a musical round.

Following evening prayers, it's showtime at the Place Djemaa el-Fna, the teeming medina crossroads that dates to 12th-century days when Almohad dynasty sultans cut off rebel leaders' heads and displayed them on spikes. Forsaking Riad Tamsna, I stumble about the darkening souks, getting thoroughly lost. Eventually I arrive at the three-acre market square that by night becomes a carnival. Dancers costumed in harem pants spin their fez tassels in madcap rhythms as drummers and metal castanet (*karkabat*) players keep them literally on their toes. Ten feet away, a storyteller lights a kerosene lantern to signal that his monologue, an animated legend that draws a rapt audience, is about to begin. I push past incense sellers and potion vendors to join a crowd gathered around white-robed musicians strumming away at three-stringed goatskin guitars called *kanzas*. A man playing a single-chord violin, or *amzhad*, approaches me, fiddles like a Berber Paganini, then doffs his cap for a few dirhams, gladly given. He's soon replaced by a musician tootling a boogie arabesque on a stubby *zmar* clarinet favored by cobra charmers. In the midst of the hubbub, alfresco eateries feature chefs serving snails, mussels, spicy *merguez* sausages, chicken and mountains of fries.

I climb the stairs to the rooftop terrace of the Café de France to take my final view of the clusters of performers and star bursts of fire-eaters—all forming and reforming a spectacular human kaleidoscope, filling the void, decorating every space, like the Merenid artisans of old.

A mock wedding is staged during the Brides' Fair in the main square of Agoudal, a village near Imilchil, for the benefit of family, friends and tourists. The bride and groom, resplendent in traditional Berber wedding clothes—a docile lamb representing the wish for prosperity lying at their feet—go through a 90-minute version of a ceremony that traditionally lasts two days. Though Berbers make up 60 percent of Morocco's population—the rest are Arabs—tribal activists believe their language and way of life are at risk. Berber leaders are demanding greater cultural, economic and religious rights, some of which the king appears inclined to grant.

WHILE MOROCCAN CITIES ARE DOMINATED by Arab influences, the countryside remains overwhelmingly Berber, particularly in the Atlas Mountains. The Brides' Fair at Imilchil, which combines marriage ceremonies with harvest celebrations, offers a high-spirited opportunity for outsiders to penetrate these normally closed tribal communities. To get there, I take a 220-mile roller-coaster drive north from Marrakech through dense pine forests. Imilchil is a bustling tent city lit by kerosene lanterns. Craggy mountains ring the plain like the sides of an enormous dark bowl.

The next morning, I head to a billowing canvas tent the size of a circus big top where the festivities are just beginning. According to one legend, the Brides' Fair originated when a pair of star-crossed lovers, a Berber Romeo and Juliet from warring tribes, were forbidden to marry. When they cried so long that their tears formed two nearby lakes, tribal elders gave in. The fair was created to allow men and women from different tribes to meet one another and, if all goes well, to eventually marry. Inside the tent 20 couples, already engaged to be married, are waiting their turn to sign marriage contracts before a panel of notaries. The prospective grooms, wearing crisp, white djellabas, lounge in one corner while the

In the Atlantic coast town of Essaouira, fishermen take their boats out 300 days a year, but beach them onshore to unload their catch and repair their nets (top). The sea's bounty is sold from carts (above), then grilled on nearby braziers.

young women, in brightly colored shawls, sit separately in another. Many engaged couples wait until the Brides' Fair to sign marriage agreements because it's cheaper. (Normally, a contract costs $50 per couple; at the fair it's just $12.)

Wandering around the sprawling harvest market, I peer into tents filled with dates, peppers and pumpkins. Teenage girls with arresting green eyes are dressed in dark indigo capes and head scarves tinkling with mirrored sequins. They inspect stands of jewelry and flirt with teenage boys wearing baseball caps emblazoned with Nike and Philadelphia Phillies logos.

Although traditional Berber weddings can last up to a week, such events are closed to outsiders. Brides' Fair organizers have devised a tourist-friendly alternative. In the nearby village of Agoudal, a 90-minute version is open to all: relatives, friends and tourists. On the way to Agoudal, I pass lush fields of alfalfa and potatoes. Small children hold up green apples for sale, and women bent double by loads of hay tread along on dirt paths.

In the middle of the village square, an announcer narrates each step of the marriage ritual. The comic high point comes when the bride's messenger goes to the groom's home to pick up presents on her behalf. As necklaces, fabrics and scarves are piled on her head, the messenger complains that the gifts are paltry things. "More!" she demands, jumping up and down. The audience laughs. The groom adds more finery. "Bring out the good stuff!" At last, head piled with booty, the bearer takes her leave.

Finally, the bride herself, resplendent in a flowing red robe, rides up on a mule, holding a lamb, representing prosperity. A child, symbolizing fertility, rides behind her. As women ululate and men tap out a high-octane tattoo on handheld drums, the bride is carried to the stage to meet the groom. Wearing a red turban and white djellaba, he takes her hand.

AFTER THE NUPTIALS, I DRIVE 180 MILES southeast to the Merzouga dunes near Erfoud for a taste of the Sahara. What greets me is more than I bargained for: a fierce sirocco (windstorm) pelts hot sand into my mouth, eyes and hair. I quickly post-

pone my sunset camel ride and go to my tent hotel, where I sip a glass of mint tea and listen for the wind to die down.

An hour before dawn I am rousted out of bed for an appointment with my inner Bedouin. Wrinkling its fleshy snout and casting me a baleful eye, my assigned camel snorts in disapproval. He's seen my kind before. Deigning to lower himself, the beast sits down with a thump and I climb aboard. "Hup-hup," the camel driver calls out. The animal jerks upright, then lumbers forward, setting a stately pace behind the driver. Soon I am bobbing dreamily in sync with the gentle beast's peculiar stiff-legged walk. The dunes roll away toward Algeria under tufted, gray clouds. Then, for the first time in months, it starts to rain—scattered droplets instantly swallowed up, but rain nonetheless. Ten minutes later, the rain stops as abruptly as it began.

IT WAS ORSON WELLES WHO PUT ESsaouira, my next destination, 500 miles to the west, on the cultural map. It was at this Atlantic port city, where caravans from Timbuktu once unloaded spices, dates, gold and ivory bound for Europe, that Welles directed and starred in his 1952 film version of *Othello*. Today the city is a center of Moroccan music and art. The four-day *gnaoua* (West African trance music) festival in June is one of the few cultural events in the highly stratified country that brings together audiences from all social classes. In the city where Jimi Hendrix once composed psychedelic hits, the festival sparks wildly creative jam sessions among local gnaoua masters, high-energy performers of North African *rai* music, and experimental jazz pioneers Randy Weston and Archie Shepp.

With its dramatic ramparts, airy, whitewashed medina, blue-shuttered houses and a beach that curves like a scimitar, Essaouira inspires tourists to stay awhile. Parisian Pascal Amel, a founder of the gnaoua festival and part-time resident of the city, and his artist wife, Najia Mehadji, invite me to lunch at the harbor to sample what they claim is the freshest food on the Atlantic coast. Surveying the row of carts groaning with red snapper, sea bream, crabs, sardines and rock lobsters, Amel tells me that small-boat fishermen bring their catch here 300 days a year, failing to appear only when it's too windy to fish. (The city is also renowned as the windsurfing capital of North Africa.)

Najia vigorously bargains for our lunch with a fishmonger (the tab for the three of us is $13), and we join other diners at a long table. After lunch, I wander past a row of arched enclosures built into the fortress walls, old storage cellars where woodworkers now craft tables, boxes and chairs. High on the ramparts where Welles filmed *Othello*'s opening scenes, young Moroccans while away the afternoon astride 18th-century cannon.

In contrast to the chaotic maze of the medinas in Marrakech and Fés, the wide pedestrian walkways of Essaouira's old town are positively Cartesian. Laid out by French urban planner Théodore Cornut in the 18th century, the boulevards buzz with vendors selling chickens and rabbits.

Through a mutual friend, I make arrangements to meet Mahmoud Gania, one of the legendary masters of gnaoua music. Arriving in the evening at his cinder block house, I am greeted by his wife, Malika, and three irrepressible children. We sit on velvet couches, and Malika

Essaouira, Morocco's cultural melting pot and center for the arts, is built behind the ramparts (below) where Orson Welles filmed the opening scenes of *Othello* in 1952. The city was once a trading crossroads where caravans from Timbuktu arrived to load spices, cloth, gold and ivory on ships bound for Europe. Today the city is filled with art galleries and hosts music festivals that bring experimental jazz performers from the West to jam with local *gnaoua* masters.

The 14th-century Medersa Bou Inania, Fés.

translates Mahmoud's Arabic comments into French. Though Mahmoud's group of five attracts thousands of fans to concerts in France, Germany, Japan and all over Morocco, traditional gnaoua ceremonies are private, all-night affairs that take place at home among family and friends. The purpose of these recitals is therapy, not entertainment. The idea is to put a person suffering from depression, insomnia or other psychological problems into a trance and exorcise the afflicting spirit; today the ritual is not used to cure serious medical ills.

As Mahmoud and Malika wrap up their description of the ceremony, which involves colored cloths, perfumes, food, drink, incantations, prayers and mesmeric, trance-inducing rhythms, Mahmoud slides onto the floor and begins picking out a hypnotic tune on the goatskin lute called a *guimbri*. Malika claps in counterpoint, and the drummer from his group joins in, tapping a syncopated beat on a plastic box of a cassette tape. The children are soon clapping and dancing in perfect time. "Hamza is only 10 years old, but he's learning the guimbri from his father and has already performed with us in Japan," says Malika, hugging her oldest child.

After a while the group takes a break, and I step outside, alone under the stars, to smell the sea breeze and listen to the distant echo of fishermen dragging their boats across the rocky beach into the surf. Soon, this scraping sound mingles with the faint plucking of the guimbri as the music resumes inside. Caught up in the Moroccan need to entertain and be entertained, they've started without me. Escaping the guimbri, like sleeping through Imilchil's Berber festival, is out of the question. I inhale the night air. Refreshed, I slip back inside, ready for more.

Paris-based Richard Covington wrote about Yo-Yo Ma and the Silk Road in the June issue. Kay Chernush has taken photos from helicopters, construction cranes and now atop a crabby camel.

THE JOURNEY BEGINS

Morocco has it all! Music, beaches, festivals and grand palaces—but where to begin?

SAVING MOROCCO'S ANCIENT PLACES: In Morocco, the historic centers of Fés, Marrakech, Essaouira, Meknes and Tetouan, as well as the Roman city of Volubilis and the earthen-walled town of Ait-Benhaddou, have all been designated World Heritage Sites by the United Nations. Created in 1972, the World Heritage program has listed 721 cultural and natural sites of historical, aesthetic, architectural, archaeological, scientific, ethnological or anthropological value. To be on the list, the host country must commit to preserving the designated site's character. More than 150 nations contribute funds to help conserve sites and train local specialists.

◆ **INFORMATIVE WEB SITES:** Marweb (www.marweb.net) provides links to cultural events, festivals and publications, while the House of Morocco (www.maroc.net) produces a daily Internet radio program. The *Rough Guides* series of travel books (www.roughguides.com) offers tips on where to go and what to avoid, in addition to presenting sample selections of the country's many musical styles.

◆ **INSIDE TIP:** To avoid being hassled by freelance "guides" offering to show you around a souk, or marketplace, you should hire an official guide, either from your hotel or the tourist office.

◆ **CHOICE COLLECTIBLE:** Marine fossils, some more than 500 million years old, are harvested from the desert and sell at prices ranging from a few dollars to a few hundred dollars. Erfoud is fossil central, but beware of fakes, which are abundant.

◆ **YOU SHOULD KNOW:** Many Moroccans, particularly women, strongly object to having their photographs taken. Be sure to ask permission first.

◆ **FOR THE GOURMAND:** A Moroccan feast typically begins with a selection of small salads composed of olives, peppers, chickpeas and cucumbers. For the main course, try chicken with lemon and olives, a cinnamon-almond *pastilla* of filo pastry filled with pigeon, or lamb *tagines* cooked in clay pots shaped like conical hats.

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MAP: ELIZABETH WOLF

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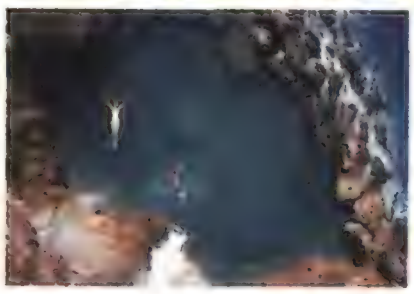

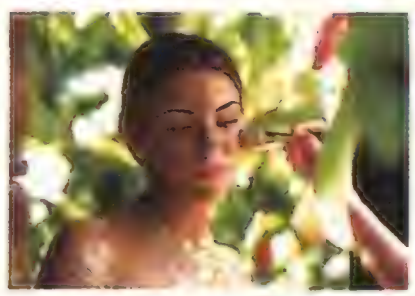

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PALIO: ITALY'S MAD DASH

PAGEANTRY, PASSION AND INTRIGUE ARE ALL ON DISPLAY IN THE NO-HOLDS-BARRED, BAREBACK HORSE RACE RUN TWICE EACH SUMMER IN THE MEDIEVAL CITY OF SIENA

Horses representing 10 of the 17 Sienese *contrade*, or neighborhoods, line up at the starting rope as jockeys strike last-minute deals.

PHOTOGRAPHS BY FRANCESCO CITO

ANYTHING GOES IN SIENA, ITALY, DURING the spectacular medieval-style Corsa del Palio—the breakneck, bareback horse race held twice each year—July 2 and August 16—in the historic heart of the Tuscan city. Bribery, betting and betrayal are the order of the day, and secret negotiations and clandestine plots abound. Though accompanied by days of abandoned revelry, the colorful festival is fraught with bitter rivalries. In races past, horses have been drugged, and jockeys, professional riders brought in from outside the city, have even been kidnapped to keep them from racing.

The ancient spectacle, as much joust as race, dates to at least the 13th century and likely has its roots in Roman military training. It takes its name, Il Palio, from the Italian word for banner, which in the Middle Ages was presented as a prize in tournaments. The winner of the Palio, which is held in honor of the Virgin Mary, earns a hand-painted silk banner bearing her image.

Lady Luck and double-dealing dominate. Participation and starting positions are determined by lot, and jockeys, who are paid handsomely to ride, are free to bribe or be bribed. During the competition, ten horses, representing 10 of the 17 Sienese *contrade*, or neighborhoods, run clockwise three times around the 330-meter track of yellow earth ringing the Piazza del Campo, the city's main square. Horses wear only bridles, otherwise racing *nudi* (naked). Jockeys, often the *butteri*, or cowboys, of the Maremma area of southwest Tuscany, boast the costumes and colors of their respective contrade and brandish oxhide whips. The rules of the race allow them to whip their own horse or a competing horse or rider. There is only one restriction: a jock-

The night before the Palio, each *contrada* throws a festive banquet (above, left, the Nicchio main square) and revelers wash down thousands of pounds of pasta, pork, veal and vegetables with gallons of wine, and consume countless slices of cake. On the day of the race, each horse is blessed inside the incense-filled church of the contrada it represents (above, top). "Go forth and return a winner!" commands the priest. Manure spontaneously left at the altar is considered a good omen. Bleachers line the perimeter of the shell-shaped Piazza del Campo (above), transformed into a makeshift arena, and yellow earth is laid over the brick pavement to create a 330-meter track. Thousands view the frenetic minute and a half of medieval madness. The horses (left), mostly *mezzo sangue*, or "half-bloods," come mainly from the nearby Maremma region. Tradition holds that a horse with large eyes is sincere and that one with small eyes is unlucky.

ey can't grab the reins of another horse.

The passion that drives the Palio is the intense rivalry among Siena's 17 contrade. Each bears the name of an animal or object—Porcupine, Panther, Unicorn, Shell—and has its own seat of government, church, social club, patron saint and museum, where Palio banners won in the past are displayed. Each contrada, too, has its own alliances and enmities with its neighbors.

Ten contrade are chosen by lot to ride in the July Palio. The other seven, plus three of the July competitors, also determined by lot, run in the August race. Winners, whose only prize is a banner, must pay dearly for their victory—hundreds of thousands of dollars to cement alliances and buy loyalty. The race is unique in other ways as well. Though there is no official betting, millions of lire change hands. The horse that comes in second is considered a bigger loser than the last-place finisher, and the contrada that is the traditional enemy of the winner is deemed a loser even if it didn't have a horse in the race.

The Palio culminates months of preparation and four days of events that include preliminary trials, open-air feasts and a medieval pageant and parade, complete with drums, floats, flag twirlers and an ox-drawn war chariot. The track of compacted yellow earth goes down in the piazza four days before the race, and that very night jockeys try out potential mounts by the light of the moon. Lots are drawn the next day to select participants. A ritual of trials allows the captains of the competing contrade to select ten evenly matched horses for the race. After the health of the horses is certified, lots are drawn to decide which contrada each will represent. Once assigned to a contrada, a horse cannot be replaced. If a mount falls ill or even dies, its contrada is out of luck, and out of the race.

At last year's August Palio, spectators screamed and whistles blared as officials tried to line up the horses at the starting rope. Nine of the horses were penned between two ropes, and jockeys struck last-minute bargains with one another as their mounts pawed the ground. At the starting signal, the tenth horse galloped up from behind, and the race was on.

Amid a flurry of banners and a cloud of dust each year, the horses tear down the track. Jockeys maneuver and wield their whips. A few lose their mounts. But all is not lost. A riderless horse can still win. In 90 seconds, it's over.

At the banquet following the Drago (Dragon) contrada's victory last August, revelers consumed 660 pounds of ravioli, 550 pounds of artichokes, 3,500 sausages and 6,500 tarts. The winning horse occupied a place of honor behind the head table. —*Diane M. Bolz*

ALL: FRANCESCO CITO/PANOS PICTURES

During the frantic 90-second, 990-meter dash (above), horses complete three circuits of the piazza. Running "naked" through rising dust, the mounts wear bridles, but no saddles or stirrups. Jockeys, who can come from as far away as Sardinia or Sicily, wear the colors of the contrada they represent and are protected by bodyguards around the clock. (The horses are also guarded.) Many riders and their mounts fall victim to one of the two treacherous 90-degree turns, especially the San Martino curve (above and at left), where the corner is padded with thick mattresses to minimize injury.

Iron WILL

WHILE WILLIAM CLARK IS BEST KNOWN FOR THE EXPEDITION HE MADE WITH MERIWETHER LEWIS, HIS LATER LIFE WAS AS HISTORIC—AND MORE CONSEQUENTIAL ◆ BY LANDON Y. JONES

Scattered on the prairie around William Clark and two other federal commissioners was one of the largest assemblies of Indians ever seen by white men. It was the summer of 1815. Some 2,000 warriors, women and children from more than a dozen tribes had arrived at Portage des Sioux, where the Mississippi and the Missouri rivers meet just above St. Louis.

White birch canoes of the Kickapoo and the Potawatomi from the Upper Mississippi and rough-hewn dugouts of the Omaha and the Osage from the Missouri lined the banks. The fur trader Manuel Lisa had just delivered several barges loaded with 43 chiefs, many of them colorfully dressed in tribal finery. Two American gunboats, the *Governor Clark* and the *Commodore Perry*, patrolled the rivers under the limestone bluffs. A scene of 100 white tents, pitched by U.S. soldiers and lined up in orderly rows, met the Indians. Drums rolled and flags whipped in the 90-degree heat.

If Black Hawk (left) didn't sign the peace treaty, "blood would be spilt," an angry Clark vowed.

For William Clark this was a watershed moment in a life already rich in drama. It also proved a pivotal one in American history. Standing in the shade of a brush arbor, dressed in a dark suit with a high white collar that set off his red hair and large blue eyes, Clark saw many familiar faces in the crowd. A decade earlier, he had met some of these same chiefs when he and Meri-

SMITHSONIAN

Clark's entries in his expedition journal are blunt, earthy and crackling with drama.

wether Lewis led the Corps of Discovery up the Missouri River and across the Rockies to the Pacific on their famous 8,000-mile journey.

But as governor of the Missouri Territory, Clark now had a different agenda. Using the salutations of the day, he assured his Indian "children" that their "Great Father" in Washington wanted nothing more than peace. Obtaining it, however, would require all of his well-known negotiating skills. Under the terms of the Treaty of Ghent, which ended the War of 1812, the defeated British had left it to the Americans to deal with England's former allies, the Indians. Abandoned by the British and alarmed by increasing numbers of American immigrants invading their homelands, some tribes had continued to resist. How this difficult situation would resolve itself lay largely in the hands of this one man.

That William Clark played a formative role in shaping the West of 1815 may surprise those who think of him only as the lesser-known leader of the two-and-a-half-year expedition—the first ever by Americans across the continent—to map the lands acquired by President Thomas Jefferson in 1803.

Dozens of books about Lewis and other members of the Lewis and Clark expedition—Sacagawea, John Colter, the slave, York, even Lewis' dog, Seaman—have been written. Stephen Ambrose's 1996 biography of Lewis, *Undaunted Courage,* ends with Lewis' suicide in 1809. Yet, surprisingly, no full-length biography of William Clark has ever been published. One reason may be the duration of Clark's public life. Contrary to F. Scott Fitzgerald's observation that "there are no second acts in American lives," Clark's post-expedition contributions to Western history are so significant that his name might well be better known had he never gone to the Pacific with Lewis. Today, as the Lewis and Clark bicentennial approaches (2003-2006), new evidence about his personal qualities is emerging, most recently in James Holmberg's *Dear Brother*, a collection of recently unearthed letters between Clark and his eldest brother, Jonathan.

For 30 years after the expedition, William Clark ranked as the leading federal official in the West, the point man for six Presidents, from Jefferson to Van Buren, who trusted him with protecting American interests on territory bitterly contested by both Britain and Spain. At the same time, Clark was also the one white man that Indians on both sides of the Mississippi thought they could trust. Yet his treaties would extinguish Indian rights to millions of acres on either side of the Mississippi.

It is Clark's role in the removal of Native Americans that so discomforts us today—and may contribute to the reluctance of biographers to tell his story. And unlike the triumph of the expedition, the story of white and Indian relations is messy. Were Clark's post-expedition efforts well-meaning attempts to save native peoples who would have been more tragically pushed aside by the encroaching white culture? Or was he the agent for land-hungry Americans who thought nothing of cheating Indians? Or was the truth somewhere else? Did Clark embody all the ambivalences and contradictions of his time in matters of race and country?

The record is clear that Clark's efforts to reconcile the clashing interests of Indians, westward moving settlers and the federal government consumed—and profoundly disappointed—him. The record is equally clear that those efforts led to an overwhelming tragedy: the forced relocation of tens of thousands of Indians from their homes in the East and South, across the Mississippi to lands in Oklahoma and Kansas.

AT THE TIME OF PORTAGE DES SIOUX, St. Louis was still a remote settlement of some 2,000 people, perched like an early-day Beirut on the edge of the continent's most contested lands. It was the only non-Indian town of any substance west of the Mississippi. Americans, English, Spanish and Russians all competed for the loyalties of 100,000 Indians, who were the main suppliers for

CLARA MOORE/MISSOURI HISTORICAL SOCIETY, ST. LOUIS; DAVID SCHUITZ/MISSOURI HISTORICAL SOCIETY; P. 96 SMITHSONIAN AMERICAN ART MUSEUM/ART RESOURCE; P. 97 MISSOURI HISTORICAL SOCIETY

"Do not grieve," Big Elk counseled. "Misfortunes will happen to the wisest men."

the fur trade, the dot.com bubble of its day. The steady supply of furs depended on peace with the Indians.

But to American settlers fearful of Indians in the months after the Treaty of Ghent, their trading partners looked more like terrorists. In the spring before the council, the *Missouri Gazette* reported that "very few days elapse without unfolding some horrid deed; a family cut off, travelers shot and cut to pieces on the frontiers or in the neighborhood of our villages; the thing is passed off as a matter of course until the news of another massacre arrives."

AS CLARK LOOKED OVER THE VAST assemblage, he realized that one tribe was conspicuous by its absence of high-level chiefs. A band of Sauk from the Rock River (near present-day Davenport, Iowa), led by a charismatic war leader named Makataimeshekiakiak but known to whites as Black Hawk, had sent only subordinates. If the treaty were not signed by the Sauk, the most aggressive and warlike tribe on the Mississippi, Clark's peace initiative would have little meaning.

Both Clark and Black Hawk were in their mid-40s at the time. Black Hawk was as commanding a figure in his culture as Clark was in his. Just under six feet tall, the warrior was sinewy, broad-shouldered and weighed only about 140 pounds. His shaved head bore a single short tuft of hair, to which he attached a feather.

Angered by Black Hawk's absence at Portage des Sioux, Clark delivered an ultimatum: either he come to sign the treaty or, as one Sauk chief remembered it, "blood would be spilt for their disobedience." Tribal enemies of the Sauk were so heartened by Clark's public threat that they stood and cheered. Alarmed, the Sauk left the council, slipping away under the cover of darkness.

No sooner had negotiating begun than another event threatened to derail the Portage des Sioux meeting. Black Buffalo, a Sioux chief whom Clark knew well from the expedition, died suddenly, a potentially disastrous omen to the Indians. But Clark responded diplomatically, giving the chief a full military funeral, complete with rifle salutes. Then, in a dramatic moment, an Omaha chief named Big Elk delivered a stirring eulogy for his traditional enemy. "Do not grieve," he counseled the other tribes. "Misfortunes will

BETTMANN/CORBIS

Twentieth-century painter Alfred Russell illustrated the now-discredited view (above) that Sacagawea served as expedition guide.

happen to the wisest and best men."

Big Elk's oration cleared the air. Clark further eased tensions by displaying his skill in imitating birds and animals, while his 6-year-old son played nearby. In the end, 13 tribes signed treaties assuring "perpetual peace and friendship." In return, Clark promised to protect them and safeguard their remaining lands. He sealed the peace with whiskey and $30,000 in gifts, a largesse that outraged St. Louis settlers still crying out for vengeance.

The Grand Council would become more of a turning point than any of the participants could have guessed. By putting themselves under the "protection" of the federal government, the tribes lost their ability to play off the British against the expanding American nation. Settlers held back by the War of 1812 began to pour across the Mississippi. From that time on, councils between Americans and Indians would not be about "perpetual peace and friendship" but about removal and loss of land.

I signed the treaty, Black Hawk said, "not knowing I consented to give away my village."

Black Hawk would prove more of a problem than Clark could anticipate. After several delays, he finally paid Clark a visit in St. Louis the following May. "I touched the goose quill to the treaty, not knowing, however, that, by that act, I consented to give away my village," he later bitterly recalled. Unwittingly, Black Hawk had ratified a much-hated 1804 treaty that had turned over millions of acres of his tribe's homelands along the Upper Mississippi to whites. The price? Goods valued at $2,234.50 and an annuity of $1,000. The 1816 treaty marked another step on the way to the brutal Black Hawk War, which would erupt 16 years later; Black Hawk believed that the whites had once again deceived him.

The Mississippi River was "tinged with the blood of Indians," an eyewitness reported to Clark after the Battle of Bad Axe, where U.S. forces massacred Black Hawk's band in 1832.

GRANGER COLLECTION

FROM AN EARLY AGE, CLARK LIVED IN A world rent by Indian and white violence. Attracted after the Revolution by reports of the fertile and game-rich lands beyond the Appalachians, the Clark family, including 14-year-old Billy, picked up their possessions, which probably included a dozen or more slaves, and moved west from Virginia in 1784, settling above the waterfalls near today's Louisville. There, the family found itself in the middle of bitter conflicts between migrating settlers and Indians defending their traditional hunting grounds. One of Billy's older brothers (he was the ninth of ten children) was killed by Indians on the Little Wabash River.

George Rogers Clark, the family's second son and a Revolutionary War hero 22 years Billy's senior, was an especially remorseless Indian-fighter. He led a series of search-and-destroy missions into Shawnee country north of the Ohio, burning villages and cornfields and plundering graves for burial goods and scalps.

In the midst of this "dark and bloody ground," as the Ohio frontier was then known, Billy grew up to be a solidly built six-footer with an easy manner. He joined the militia in 1789 and took part in several Indian campaigns as a supply officer, building forts and escorting supply trains. He saw several skirmishes with Indian tribes—and soon stood out as a fearless and capable soldier, even within the confines of his overachieving family.

In 1792, the 22-year-old Billy moved over to the regular army, with a lieutenant's commission signed by George Washington. He served under Gen. "Mad Anthony" Wayne and led an expedition to Chickasaw Bluffs, near to-

Ten years after Portage des Sioux, Clark convened another large-scale meeting of Indian chiefs in 1825 at Prairie du Chien in Wisconsin (above), laying the groundwork for the wholesale removal of Indians from their lands. Clark often handed out peace certificates (below).

day's Memphis. In 1794, he commanded a rifle company at the Battle of Fallen Timbers, which crushed Shawnee resistance to American settlement north of the Ohio. The following winter, Clark met Ensign Meriwether Lewis, four years his junior, when Lewis was transferred to his rifle company.

By 1803, the 33-year-old Clark had traveled extensively through the trans-Appalachian west. He had commanded military expeditions on the move on rivers, making maps and keeping journals along the way. He knew how to build and supply forts. He had seen combat with Indians and was familiar with their cultures. Lewis was not far from the truth when he wrote Clark on June 19, 1803, that there was "no man on earth" more qualified to join him as co-captain on the journey to the Pacific.

Lewis, by then a captain in the Army, had planned the expedition while working in the White House as President Thomas Jefferson's personal

secretary. Though Clark was to be his cocaptain, an expected promotion by the Army never came through—an awkward fact both men concealed, preferring to be treated as equals.

These equals did not have similar personalities, however. For years scholars and writers portrayed Lewis and Clark as temperamental opposites. If Lewis was the educated, aristocratic, mercurial Virginian, then Clark was the blunt, homespun, down-to-earth Kentuckian. The written record of the expedition's journals seems to support this notion. Lewis' entries are often long and learned, full of rhetorical flourishes; Clark's are short, matter-of-fact and rich in rococo misspellings. Lewis rhapsodized over "truly magnificent and sublimely grand" sights; Clark wore "mockersons" and slapped away annoying "musquetors."

But the stereotypes mask distinctive attributes of both men. During the expedition, Lewis acted more like the group's grand strategist, a visionary CEO to Clark's more hands-on chief operating officer. But, apparently beset by frequent depressions, Lewis inexplicably failed to write in his journal for long stretches of time. Clark missed only a handful of entries while on a hunting expedition. During the expedition's most perilous hours, when the

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After arriving in St. Louis in 1808, Clark's first wife, Judith (below), complained of homesickness in "this wild Country." By the 1830s, the bustling metropolis (above, in a rendering by 19th-century artist George Catlin) boasted 5,000 people and regular steamboat service.

party nearly starved crossing the Lolo Trail in Idaho in the fall of 1805, it was Clark who made the decision to push ahead to find shelter and food.

Indians were especially fond of Clark. Lewis had taken medical training under Benjamin Rush in Philadelphia, intending to be the expedition's primary doctor. But the temperamental Lewis was often angered by the Indians, while Clark treated them with genuine compassion. By the return trip Clark had emerged as the Indians' "favorite physician," drawing large crowds of patients to villages.

When one Indian woman was beaten by her jealous husband, Clark unhesitatingly went to her aid. Sacagawea was so drawn to Clark that, when the entire party was near starvation, she gave him a "piece of bread" she had reserved for her infant son. On Christmas Day 1805, she gave Clark "two dozen white weazil's [ermine] tails." Clark returned her friendship after the expedition by virtually adopting her son, Jean

Baptiste ("Pompy"), and paying for his education. (Later befriended by a German noble, Prince Paul of Württemberg, Pompy traveled to Europe before returning to the frontier as a guide and translator for military expeditions and for gold-seeking forty-niners. He died in 1866 at the age of 61.)

Sometime during the journey—probably after the expedition left Fort Mandan in the spring of 1805 and headed into territory unknown to white Americans—Clark became the de facto leader. The men had always dealt more directly with Clark, but by then something had changed. For one thing, Clark's mapmaking and navigational skills had come to the fore.

Both men returned as heroes. President Jefferson appointed Lewis governor of the new Louisiana Territory. Clark became brigadier general of the militia and principal Indian agent. First, though, he returned to Virginia to court and marry Judith Hancock, the daughter of a prominent family. He had named the Judith River in Montana for her during the expedition. She was 16; he was 37.

They moved to St. Louis, by then a roistering jambalaya of Americans, Creole French, Spanish, Indians, French-Indian métis, slaves and free blacks. With the family were their household slaves, including York, Clark's personal servant and the only black man on the expedition. York had been treated as an

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Lewis' suicide by gunshot a year after the treaty was signed proved a devastating blow to Clark.

equal of the other men during the journey. Upon their return, he petitioned for freedom to join his wife in Louisville. But Clark refused—and did not hesitate to beat the man who had accompanied him to the Pacific. "I fear you will think I have become a severe master," Clark worried to his brother Jonathan, after he had whipped a pregnant female slave named Easter. "It is not the case, but I find it absolutely necessary to have business done." It would take Clark another decade to finally free York.

Clark's contradictions, to be sure, were hardly his alone. Visitors from Europe were often appalled by American hypocrisy. "You will see them with one hand hoisting the cap of liberty, and with the other flogging their slaves," wrote English traveler Frances Trollope. "You will see them one hour lecturing the mob on the indefeasible rights of man, and the next driving from their homes the children of the soil, whom they have bound themselves to protect by the most solemn treaties."

Clark similarly struggled to reconcile his own warm feelings for individual Indians with the harsh policies he pursued as principal Indian agent. Charged with supervising some 100,000 Indians living on the Missouri and the Upper Mississippi rivers, Clark set about to negotiate treaties to keep peace between them and whites on the borderlands. One of the first was with the Osage, the dominant tribe on the Lower Missouri. They were a proud, resourceful people described by Washington Irving as "Romans . . . the finest looking Indian . . . in the West." The Osage had never fought a war against the Americans. Yet in 1808 Clark forced on them a treaty that all but destroyed their culture.

In return for ceding 50,000 square miles of their prized hunting grounds—almost all of Missouri—thereby ruining their fur-based economy, the Osage were given $1,400 in gifts, an $1,800 annuity, the services of a blacksmith, some farm tools and the use of a gristmill. Osage land purchased by the government for 10 cents per square mile was later resold for $1 to $2 per acre. Even Clark came to regret the terms of the treaty. Ethan Allen Hitchcock said Clark told him "it was the hardest treaty on the Indians that he ever made, and that if he was damned hereafter, it would be for making that treaty."

Stresses of his first wife's death and his defeat in a bid for the governorship of Missouri show on Clark's face at age 50 in 1820.

Lewis' suicide by gunshot a year after the treaty was signed proved a severe blow to Clark. "I fear, O' I fear the waight of his mind has overcome him," he wrote in anguish to his brother Jonathan. A week later, he called Lewis' death "a turble Stroke to me, in every respect." Clark dutifully set about securing publication of the expedition journals Lewis had been carrying—but was hesitant to succeed him as territorial governor. "I do not think myself calculated to meet the storms which might be expected," he said, reflecting the self-effacing style that he displayed throughout his entire life.

But with the outbreak of the War of 1812, Clark changed his mind and accepted President James Madison's appointment to the governorship. He organized a militia and kept the tribes of the Lower Missouri from aligning with the British—even if it meant letting them fight one another—and led a campaign to the Upper Mississippi that helped blunt British ambitions there. Amazingly, the Osage volunteered 500 warriors to support Clark, a testament to his persuasive powers.

A visit with Clark became a required stop for any V.I.P.s who came to St. Louis. If the visitors were lucky, they might see Clark's great map of the American West—the first to accurately show the inner continent we know today—which he had drawn during the expedition and painstakingly refined afterward by talking to returning fur traders and Indians who knew the territory intimately. When it was finally published in 1814, Clark's map literally redrew the

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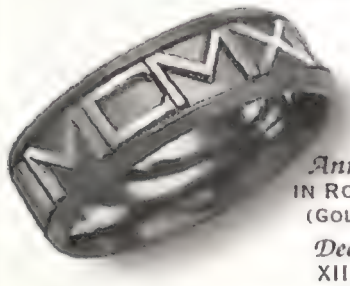

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continent. It remains one of the seminal feats in the history of cartography.

In 1820, Clark reluctantly entered the first election for governor of the new state of Missouri—and lost. Ironically, voters, rankled by the gifts distributed at Portage des Sioux, thought that "the Red-Headed Chief" had become too soft on the Indians. Preoccupied by the illness and death of his wife, Judith, that June, Clark hardly campaigned. Two years later, though, Congress appointed him to a newly created Superintendency of Indian Affairs at St. Louis.

By this time, Clark had become convinced that the survival of the Indians depended upon moving them out of the reach of whiskey-selling traders and land-hungry settlers. "Their power has been broken, their warlike spirit subdued, and themselves sunk into objects of pity and commiseration," he wrote to his superiors in Washington. "While strong and hostile, it has been our obvious policy to weaken them; now that they are weak and harmless, and most of their lands fallen into our hands, justice and humanity require us to cherish and befriend them. . . ."

But how would they be cherished? Like Jefferson, Clark concluded that the tribes must be moved away from the United States and its territories "to a country beyond those limits, where they could rest in peace and in perpetuity reside on the lands on which their building and improvements would be made." He thought that relocation to Indian country in today's Oklahoma and Kansas would buy them time to develop the farming skills necessary to adapt to the white man's world—and in the process would hand over the rich Indian lands east of the Mississippi.

Clark signed treaties with dozens of tribes on the lawn of Castor Hill, his country house outside St. Louis. What had begun as a steady trickle of Indians moving west across the Mississippi River became a torrent—Shawnee, Potawatomi, Kickapoo, Sauk and Fox, Delaware, Chickasaw and many other tribes traded hundreds of millions of acres in Ohio, Indiana, Illinois, Mis-

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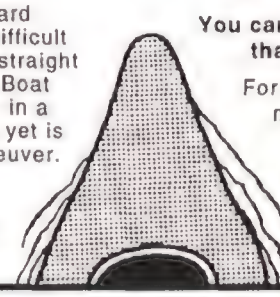

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souri and Arkansas for land of unproven value west of Missouri.

Any who chose to resist were quickly crushed. In April 1832, Black Hawk and about a thousand Sauk and Fox, including women and children, crossed to their former lands on the east bank of the Mississippi to plant crops and reclaim their village at Rock Island, Illinois, now occupied by whites. "My reason teaches me that land cannot be sold," Black Hawk said. "The Great Spirit gave it to his children. . . . So long as they occupy and cultivate it, they have the right to the soil."

Clark was furious. He had counted on the Indians not to inflame settlers during their removal—and now the worst was happening. "I hope the Indians will be forced to fight and receive a complete chastisement for their horrid crimes," he wrote his 23-year-old son, Meriwether Lewis Clark, then aide-de-camp to Army Gen. Henry Atkinson.

In August, Clark boarded the steamboat *Warrior* and headed up the Mississippi to the contested lands. But when he learned that U.S. troops had brought cholera aboard, he transferred to another boat to return home. The *Warrior* continued upstream, where troops commanded by Atkinson pursued and eventually caught up with Black Hawk's warriors and their families as they attempted to flee across the Mississippi River.

The Battle of Bad Axe was nothing less than a massacre, with soldiers firing at Indians attempting to swim across the river. When the so-called Black Hawk War ended, most of Black Hawk's followers lay dead.

Black Hawk was captured, put in chains and imprisoned at Jefferson Barracks, outside St. Louis. The author Washington Irving visited him there and found "an old man, upward of seventy, emaciated & enfeebled by the sufferings he has experienced and a touch of cholera. He has a small, well-formed head, with an aquiline nose and a good expression of eye."

Clark dispatched his old adversary to Washington to impress upon him the

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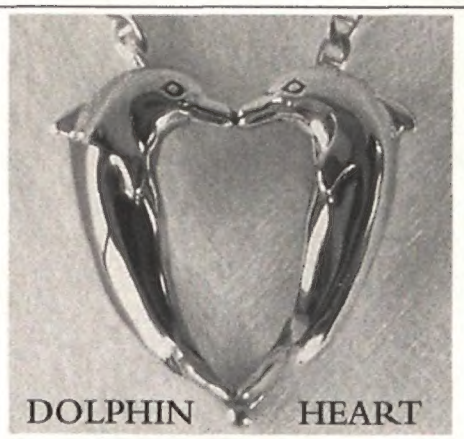
spectacle of American power and to underline the pointlessness of further resistance. After a tense meeting, President Andrew Jackson promptly imprisoned Black Hawk in Virginia. Convinced that the defeated leader was no longer a threat, Clark and Atkinson at once petitioned for his freedom. After a tour before curious crowds on the Eastern Seaboard, the old warrior was finally returned to his people in Iowa.

By the last decade of his life, in the 1830s, Clark was presiding over a remade West. The romanticized era of the mountain men was giving way to industrialized America. Five hundred steamboats a year were docking in St. Louis; railroads were on the way. In 1832, the steamboat *Yellow Stone* had churned all the way up the Missouri River from St. Louis to the junction at the Yellowstone in Montana, covering in three months what had taken Lewis and Clark a full year by poling and pulling their boats.

Now Clark was witnessing his worst fears for the Indians. During their removal from ancestral lands, he had urged the government to provide more assistance to the migrating Indians. But ravaged by settlers and alcohol, the tribes west of the Mississippi were out of his reach, sinking further into poverty. In 1837, the American Fur Company steamboat *St. Peters* brought smallpox to the Mandan—a tribe that had generously helped Lewis and Clark during the frigid first winter of the expedition—virtually wiping them out.

Meanwhile, Clark was recovering from personal blows of his own. Over a decade he had lost three of his seven children, and on Christmas Day 1831, his second wife, Harriet Radford, died. "My spirits are low and my course indecisive," he wrote in a rare departure from his usual stout optimism.

He was now 61. Visitors to St. Louis found what one called "a fine soldier-like-looking man, tall and thin. His hair was white; but he seemed to be as hardy and vigorous as ever." The old explorer whose brothers were heroes of



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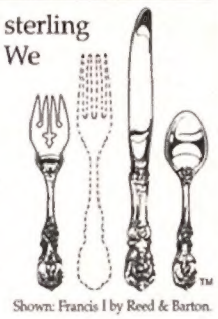

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the Revolution was alive to meet the leaders of America's next great upheaval. In declining health, Clark moved in with his son, who rented out a cottage he owned to a young engineer from West Point named Robert E. Lee. As an officer in the Black Hawk campaign, Clark's son had served with Abraham Lincoln, then a captain in the Illinois militia. And among the officers who escorted the captured Black Hawk to St. Louis was Jefferson Davis.

William Clark died at age 68 on September 1, 1838. His funeral was the biggest ever seen in St. Louis, with a hearse drawn by four white horses followed by a procession of carriages and mounted troops more than a mile long. He was the sole survivor of his nine siblings and among the last members of the Voyage of Discovery to die.

A month later, Black Hawk died too, at his home along the Des Moines River. He received a traditional Indian burial—sitting upright in a log mausoleum. Less than a year later, his grave was plundered by whites. His remains were recovered, and his skeleton wired back together and sent to a museum. His bones were destroyed in a fire in 1855.

By then, two illusions had been destroyed. One was the quixotic belief that to be saved, Indians had to be moved beyond the reach of white civilization. The other was Black Hawk's conviction that armed resistance would somehow preserve his tribe's traditional lifeways.

A bust of William Clark now sits on his grave site in St. Louis, overlooking the Mississippi. A seven-foot statue of Black Hawk stands high on its pedestal in a wooded park where the Rock River enters the Mississippi. The two stone statues gaze blankly at each other across a few hundred miles of land and two centuries, as though contemplating the fact that they could not find a place in their respective national narratives for each other.

Landon Y. Jones is the subject of this month's Editor's Inkwell, p. 9.

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PHOTO FINISH

A Splash of Summer

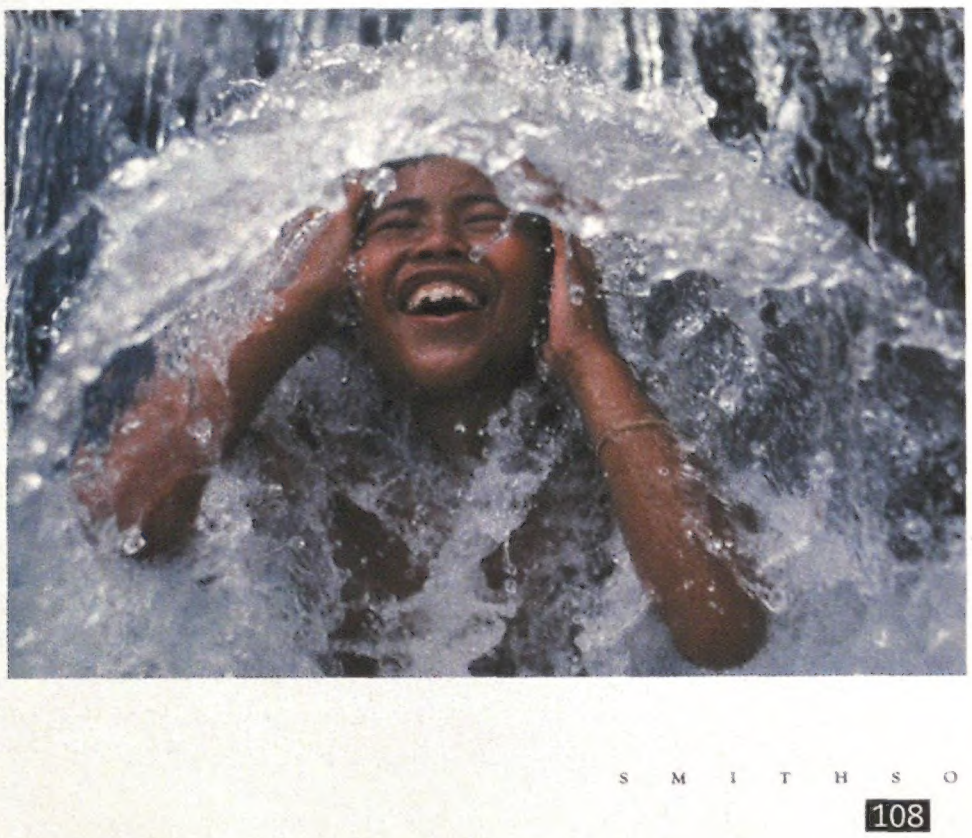
WHEN THE HEAT IS ON, NOTHING BRINGS RELIEF FASTER THAN A PLUNGE INTO—OR A COOL SPRAY OF—GOOD OLD H_2O

Hot town, summer in the city: Harlem, NY, 1963.

A Carolina water curtain turns hot dogs to chilly dogs in 2001.

In a Merrillville, Indiana, water park last summer, a waterfall fountain beckons.

Bali high: An Indonesian canal showers joy in 1993.



Who's in first. Lou Costello resists the pool in 1958.

JIM HARPER/STATE PORT PILOT, SOUTHPORT, NC; LEONARD FREED/MAGNUM PHOTOS; JOHN LUKE/THE TIMES, MUNSTER, IN; ROBB KENDRICK/AURORA; MURRAY GARRETT/HULTON ARCHIVE/GETTY IMAGES

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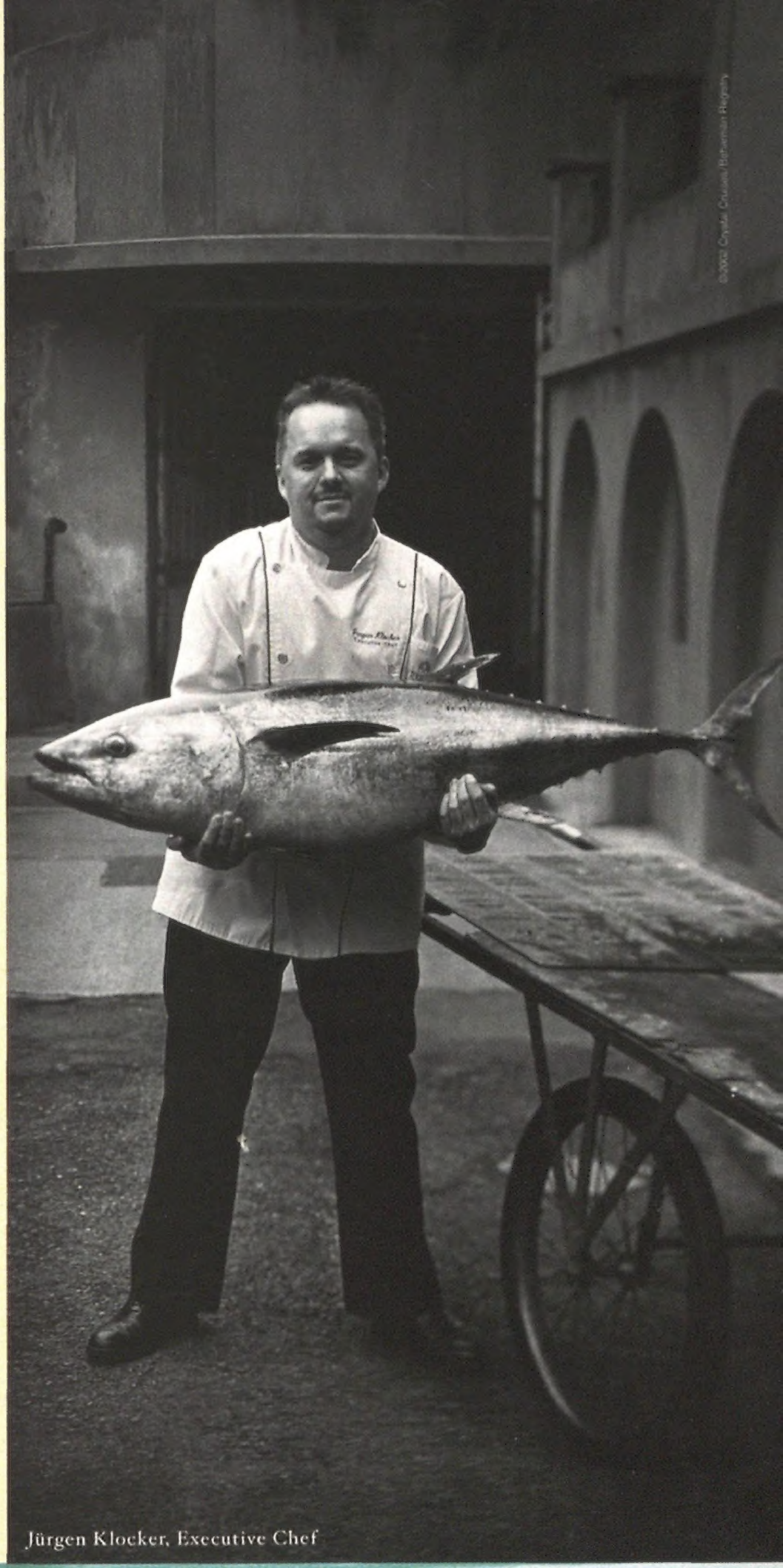

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